NAVAL AVIATION NEWS

Unzipping Cabot

Special Devices

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RESTRICTED

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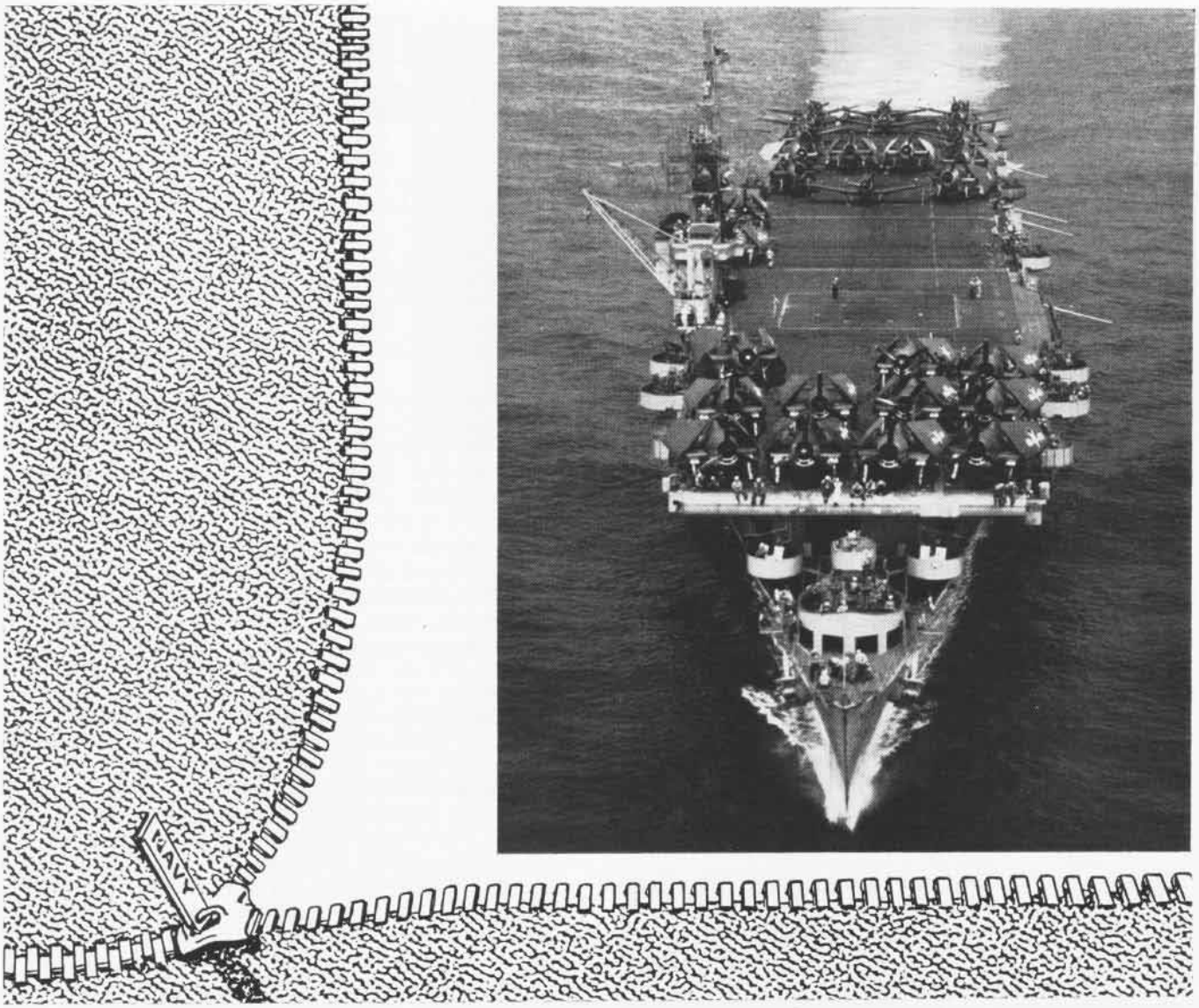
HANDWRITING in the sky high above the island of a jeep carrier, a now-extinct fighting ship which played a great big role in the winning of the war



UNZIPPING THE CABOT

IF YOU'RE a traveling man you've seen those sheepskin-lined leather bags with a zipper down one side. They're good for stowing a bottle containing valuable liquid, cushioning it against wear and tear, breakage, thieving nippers and evaporation. But when you're ready to use the commodity, just yank the zipper, extract the bottle and it's ready.

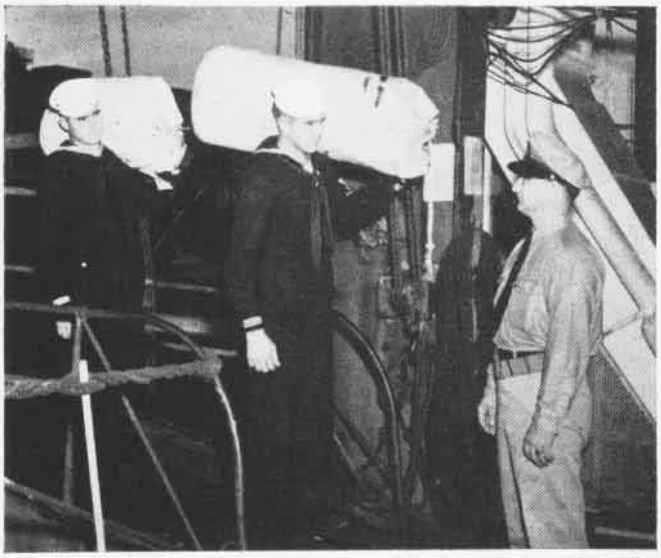
In a way, that was precisely the principle employed by the Navy two years ago when it stowed away more than 1,000 battle-weary ships in Navy Yards from Boston clear around to Bremerton. It's tough to imagine a CV or CVL in a zipper bag, but that's what it amounts to.

Unlike the old days, when all movable, corrodible or valuable gear was removed from an inactive ship, and the empty hull left to weather the elements, inactivated ships of World War II were left intact with everything on board ready to operate. Shrouded "ships on a leash" is what one Admiral calls them. All exposed surfaces were protectively insulated; plastic paint covered corrodible parts below decks. Topside gear, such as binnacles and direction finders, looked like gray ghosts under strippable plastic hoods, sprayed on in multi-layered coats. Metal "igloos," sealed at the base, covered gun mounts and movable parts. All openings were sealed and deck spaces dehumidified.

Thus, ships could stand protected indefinitely against the ravaging elements, fully equipped and ready to go almost the moment an order came through to remove wraps.

That was the theory. The question, of course, was "What will we find when the wraps come off?" There was one way to find out: Unzipper a ship and take a look. The USS *Cabot,* CVL-28, was the first carrier to undergo modern, streamlined inactivation in the 16th Fleet. She was due for the regular three-month overhaul allotted to each Reserve Fleet every five years anyway. Some protective covering would have to come off to let workmen in. Why not activate her, see how long it would take, and what was underneath.

So, the order came through to Commander Atlantic Reserve Fleet to start pulling the *Cabot's* zipper tab when a new crew under Capt. John W. King reported aboard. It was pulled. What was inside? Well, it was interesting—and there were some surprises. The Navy now knows what it will find beneath the wraps of some 50 aircraft carriers in mothballs. Two other battle-tested carriers, the *Essex* and the *Wasp,* and the CVL *Bataan* are slated to be taken out.



Welcome aboard! B. B. Slagle, RMC, gangway watch, talks to K. H. Sauls, TB3, and T. E. Bensten, MM3 reporting aboard

Crew of *Cabot* removing Komul deck covering from ship's long-unused flight deck, preparing her to go back on duty

Activation team reinstalls gun barrels on a 40 mm. mount preparatory to placing mount in service again on the *Cabot*

NAVY SELECTS WAR-TRIED CABOT AS ITS FIRST CARRIER TO UNZIP

FOR MORE than two years the USS *Cabot* tugged drowsily at her moorings in the glassy waters of the Philadelphia Naval Shipyard, along with five other carriers and 50 combat ships—all part of the Philadelphia Group of the Atlantic Reserve Fleet. For the *Cabot,* and most of the others, such lethargy was strangely alien. Her looming hulk, static and cold against the gray network of shipyard cranes and structures, was a far cry from the pulsating ship that had ploughed a historical course with lethal grace through the Pacific.

The throbbing of her engines and timpani of her guns was stilled. That peculiarly acrid carrier odor, made of gunsmoke, airplane dope, oil, gasoline and hydraulic fluid no longer hovered in the recesses of her hangar deck. The vast emptiness topside gave no indication that once an angry swarm of planes had roared from her pitching flight deck into bleak dawns.

A look at her dusty battle board still hinted at the story. This CVL, laid down originally as a cruiser in the Camden, N. J. yards and then quickly switched to a carrier when the need for them became urgent, slid into the water on 4 April, 1943. She bore the name of a 10-gun brig, one of the first four vessels of the American Navy during the Revolution. In two years of hell-roaring operation, the new *Cabot* participated actively with Task Forces 58 and 38 in nearly every major Pacific battle. She destroyed 353 enemy planes and sank 29 Japanese ships.

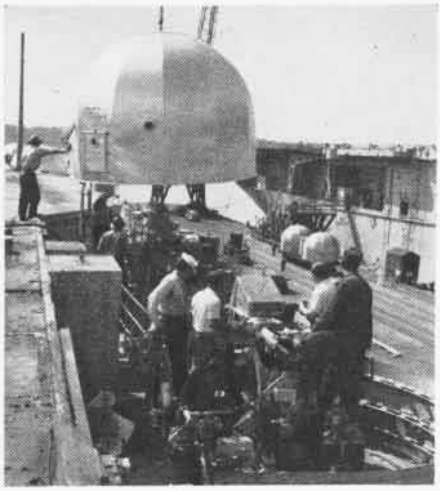
The *Cabot* was one of those ships destined to hang up records—some of them a little mad, like the time during the Truk strikes when Lt. (jg) A. R. Hawkins was catapulted in his fighter, and barely had cleared the bow when a Jap torpedo plane hove into his gunsight. Hawkin's wheels weren't up; he was hardly airborne, but he squeezed the trigger and splashed the Jap 5,000 yards from the ship.

During the famous "Marianas Turkey Shoot" in June, 1944, when almost 400 Japanese planes were shot from the sky, like so many flies sprayed with DDT, the *Cabot* took the record for Task Force 58. Her reward came in the form of a dispatch from the Task Group Commander: "You are tops in the League today." Later, in one operation over Manila, *Cabot* fighters shot down 25 planes. For this feat, the Group Commander messaged: "Well done! Your back must be badly bent carrying the load for this group."

THE CABOT had her share of narrow escapes, but Lady Luck perched on her shoulder most of the time. One October day in 1944, during the battle for Formosa, the *Canberra* and the *Houston* were badly hit. The *Cabot,* the *Boston* and five DD's were assigned to take the crippled ships to safety. Limping along at four knots, the disposition was a perfect target for Jap planes. The group became known as "The Streamlined Bait." Jap search sweeps *did* find them, and a huge force of attacking planes was sent by the Japs for a wipe-out operation. At 1325, *Cabot* patrol planes got a message from the Fighter Director Officer: "Your target is 12 o'clock, 5 miles, look up." The answer later: "Tallyho. Many, many bogies."

With no help from outside, a hard-bitten *Cabot* fighter detachment of eight planes tore out to meet an attacking swarm, estimated at 75 Jap aircraft of every description. Fearfully outnumbered, the *Cabot* planes ripped into the opposition. In an instant, the sky was a roaring, swirling mass of dogfights, curving tracer paths and explosions. And in five

R. J. Murray, ADC, and J. W. McCrory of *Cabot*'s crew light steam boiler



Igloo comes off 40 mm. gun mount as the crewmen ready armament for firing

Cabot in drydock during reactivation at Philadelphia when she got overhaul

minutes, it was raining Jap airplanes over Formosa. In less than half an hour, 31 enemy planes hit the water; the rest scattered and tailed for home. Not one *Cabot* plane was lost.

"The way those *Cabot* boys attacked," an observer noted later, "you'd have thought they were only outnumbered two-to-one."

IT WASN'T always peaches and cream for the *Cabot,* now dubbed "Iron Lady" by ships of the Task Force. On 25 November, 1944, she was providing air cover for her Group when she took on three hair-raising Kamikazes in a row. A *Zeke,* hit and burning, skimmed the island and veered crazily. It swiped a TBM parked on the catapult and then exploded on the port side of the flight deck, carrying away a 20mm mount and its entire crew, which had stayed with the guns to the end. The second suicide was splashed. The third, though hit, burning and out of control, exploded into the port blister near the water line.

With two holes in her flight deck, a six-foot hole in her hull, main damage to her electrical control system, mutilated catapult and a score of other crippling injuries, the ship limped back to Ulithi for repairs. But she was soon out fighting again—and she kept fighting till the war ended.

Those are only a few of the incidents hidden behind the bland statements on the *Cabot's* battle board. They were history on 18 April, 1946, when the ship became the first carrier to join the inactive 16th Fleet at Philadelphia. Whether that history could be repeated, in emergency, would depend on how she weathered years of idleness, which *might* be more damaging than a full-scale bombing attack.

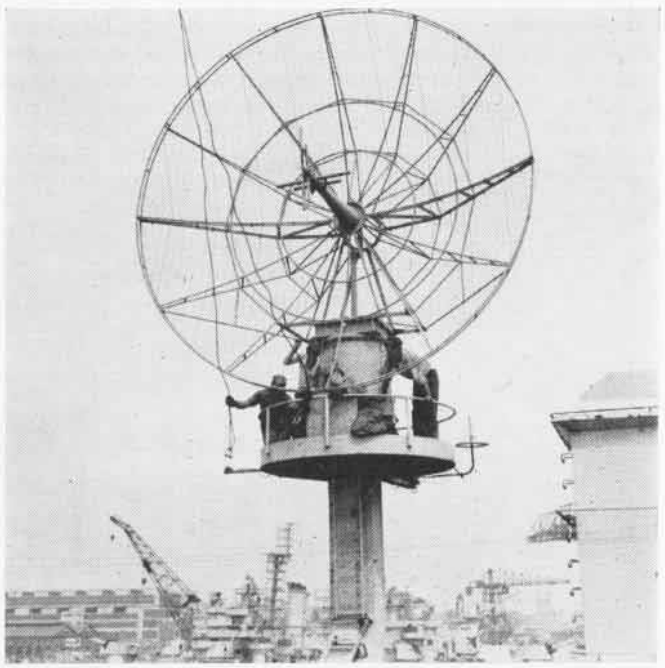
Few places in the world have a climate more disastrous to the delicate mechanisms of a ship of war than Philadelphia. High humidity, corrosive air, a high incidence of foul weather, begin their ruinous work at once on an idle ship—rusting exposed metal, seeping into the smallest cracks and gnawing with corrosive teeth at the innermost parts of engines, guns and other mechanical parts. The *Cabot* has over 1,000 such units. Everything would depend on how they survived.

For two years, the only humans on the ship were small inspection parties of Reserve Fleet personnel. Some six men made regular rounds of the *Cabot,* running through a 36-page check list each week. They checked the thick, sprayed-on strippable enclosures shrouding every piece of equipment, the composition coating that covered the flight deck, the thin brown compound sprayed or brushed over all bare metal. Below, three dehumidifying (D/h) machines kept air at a steady 30% relative humidity in the three sealed zones of the ship. Pipes of the ship's fire system sucked air into the D/h machine, where it was dried and sent out again (see diagram). In the different spaces, sensing stations sent impulses to "recorder controllers," which graphed a record of temperature and humidity throughout the ship. These were checked regularly.

A hundred Reserve Fleet men crossed the gangway of the *Cabot* first to begin the huge job of unzippering. This was the activating instruction team, made up of hull experts, ordnancemen, machinists, electricians. In a few days they would be joined by the newly assigned ship's crew, who gradually would take over the work under supervision of the experts.

The immensity of their job is better understood when you know that the things they had to do filled seven books. The book for the engineering department alone was 1,000 pages, and six inches thick.

All lids had to come off. Sealed spaces were aired, plastic coatings stripped. Many items, like catapult cables, were stowed in D/h spaces for maximum preservation. These had to be cleaned and re-assembled. Whaleboats had to be



Workers at Philadelphia Naval Shipyard reinstall *Cabot's* radar screen used by CIC for air search; ship laid up 2 years

F. Burns, AA, and R. Gortz, AA, remove metal seal through which D/H pipes ran

Crewmen check gun director electrical connection before putting it in service

B. Restuccia, MMC, and R. J. Murray examine high pressure air compressor

filled with water to swell dried-out seams. More than a thousand engines had to be cleaned, checked and put in operating condition.

Many things that were found were fully expected. Early in the game, inspection had precipitated some changes in the zipper bag. In order to conserve precious manpower during the inactive status, for instance, plastic-covered gun mounts topside were removed. These had been under "static" D/h. Silica gel kept the interior of the sealed hood dry, but had to be removed occasionally for drying out and re-activation. It meant breaking and re-sealing the shroud—a tedious chore. So these shrouds were replaced by metal "igloos," sealed at the base.

The "dynamic" D/h was piped into the igloo from the machines below. Thus, a continuous flow of freshly dried air protected the guns, and no extra labor was needed. Igloos also permitted easier access for any repair work that might be required. These spaces, the activating teams knew, would be in good shape. They were. But there were other surprises.

THE MANY problems that were bound to crop up were anticipated in at least one place. The Reserve Fleet's dispensary quit handing out aspirin tablets and simply put them in a huge salt tablet dispenser where everyone could grab his own.

One of the first surprises to confront the activation team was noted by an old Chief Bos'n: "No live stock on board."

"In the old days," he explained, "when you went to open a hatch on a secured ship, you'd hear tapping on the other side. It was the cockroaches and rats, knocking to come out. Had to open it quick and stand aside or they'd shove you over in the rush. Nothing like that here. This ship was real lonesome when we opened her up."

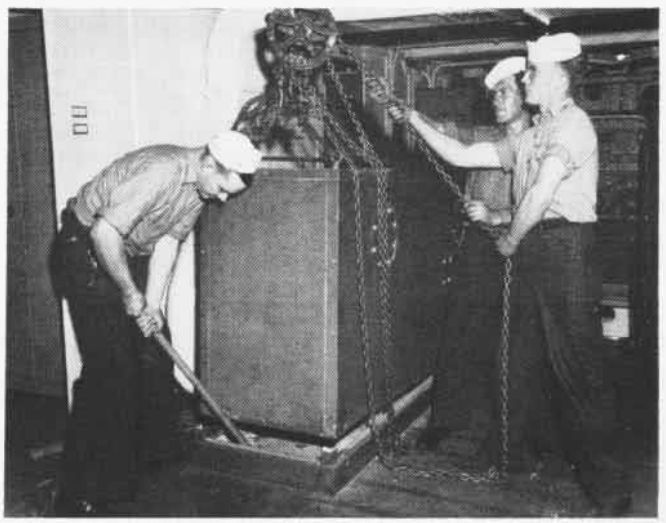
It later was borne out that D/h is more efficient than the best fumigant. Nothing can live in the sealed, dry spaces. Before entering these spaces, activation teams had to check the air to insure safe entry.

ANOTHER pleasant surprise was that not one speck of dust had collected in any D/h space, while up on the hangar deck, where D/h is impractical, there was a thick coating over everything. The Navy now is working on a feasible plan to put the hangar deck under D/h.

All told, D/h was one of the most successful features of inactivation. Everything in these spaces remained in a perfect state of preservation—with one exception.

Pipes of the ship's fire system, which were used to spread the dry air, were opened again to their native water. A moment later, activation teams and crew members were racing around the decks like a swarm of confused ants. One officer stopped to explain that "gaskets are weeping."

Activation crew below decks on *Cabot* paint the overhead in the chief petty officers' mess preparatory to opening it up



Removing dehumidification machine requires services of P. J. Cyr, SM1C, Z. A. Palmer, SA, G. W. Miles, SM, on *Cabot*

Crewman polishes off *Cabot's* war record scoreboard as she reactivates

Jap kamikaze crashes close aboard *Cabot* off Luzon; later, two hit vessel

In Cabot's sick bay, D. Preston, HN, polishes surgical gear in operating space

The dry D/h air had shriveled all the gaskets in the fire-main. This had been expected to a degree, and activation experts knew that a period of soakage would swell out these parts and make them tight again. But for a minute it was damp.

As igloos were lifted by pier cranes, ordnancemen found their guns in almost the same condition as the day they had been sealed. All engines under D/h were well preserved. The beauty of the brown protective compound covering all rustable parts is that it needn't be removed. Everything can function perfectly, if necessary, with the coating on—a great asset in time of emergency. But where the compound was removed, as it was on the plane elevator shafts, the steel underneath had not gathered a pinpoint of rust.

Up on the flight deck, men tore away at the composition deck covering. In emergency, the ship could operate with this covering intact. But the *Cabot,* being a guinea pig for all zippered carriers, had hers removed.

Did the *Cabot* meet expectations of Reserve Fleetists who completed reactivation? She beat them! The job, with limited peacetime complement of the Fleet reactivation team, was accomplished in time for the ship to become the 4th Naval District's big show for Navy Day. With all the hurdles and problems inherent in every "first try," and with all the kinks that will be ironed out in future unzipperings, the ship was habitable and operable.

At 1500 on 27 October, Admiral J. L. Kauffman, District Commandant, boarded the *Cabot* and made the principal speech before the Navy Day crowds invited aboard. Admiral Schoeffel, one of the ship's former Commanding Officers, also was aboard to participate in the ceremonies, as were many of the original personnel of the ship during her halcyon days when she was fighting the war in the Pacific.

When Capt. King took over as skipper of the *Cabot,* he had as his executive, Cdr. G. C. Merrick. Operations officer was Cdr. A. D. Morgan, air operations and CIC was under Lt. C. E. McKinley and aircraft controller was Lt. R. W. Rushing. Air officer of the carrier was Lt. Cdr. J. H. R. Fehler, with Lt. M. S. Essary as assistant. Lt. K. T. Woodruff was hangar deck officer, and ChMach N. J. Loveless flight deck, catapult and arresting gear officer.

Gunnery was under Lt. J. P. Burnett, engineering Lt. Cdr. J. E. Demon, supply Lt. Cdr. B. H. Litchfield, Jr., medical Lt. J. E. Kalchuck and dental Cdr. J. P. Wible. Ens. J. A. Blair was public information officer.

When the official commissioning ceremonies were held on Navy Day, October 27, many former members of the *Cabot's* ship's company and air groups were present to see their old ship go back on active duty. Some were civilians, others in the Reserve and others USN. When a Philadelphia paper asked for ex-*Cabot* men to make themselves known prior to the ceremony, the following men sent in their names:

Philadelphia—Lt. Cdr. Martin E. Solotar, John Taylor, H. Buffardi, Edward L. Burton, Louis J. Schmidheiser, Arthur Ketterer, Joseph S. Lord, J. W. Adamson, N. Henry Ward, Ens. H. A. Gidney, Stan Frazer, Charles B. Wilson, Richard Shepherd, A. J. DeCoste, J. Flanagan, Charles Pasley and Harold W. Dunndore.

Others were: C. Y. McGonigle, Willow Grove; Lt. (jg) Harry Migrahi, Camden; Joseph Karvois, Chester; Lt. (jg) John P. Speidel, Navy Cross winner from Ambler Pa.; Glen W. Little, North Hills; W. J. Glatts, Chester; Robert Hansen, Norristown; Wm. Fisher and Cdr. I. H. McPherson, NAS COLUMBUS, Ohio; Cpl. Joe Marks, Atlantic City; Joseph Garpino, ADC, NAAS CHARLESTOWN, R. I.; Pvt. Wm. L. Baker, Quantico; Richard M. Driscoll, Fayette, Md. Paul Kallock Jr., Perryopolis, Pa.; Joseph A. Rooney Jr., Wilmington, Del; Arthur A. Drozd, Amsterdam, N. Y.; Albert G. Kerley, Woodbury, N. J.; Cdr. M. Fisher, Gahanna, Ohio; Walter Dynia, New York City, and Anthony Cavallaro, Camden, N. J.

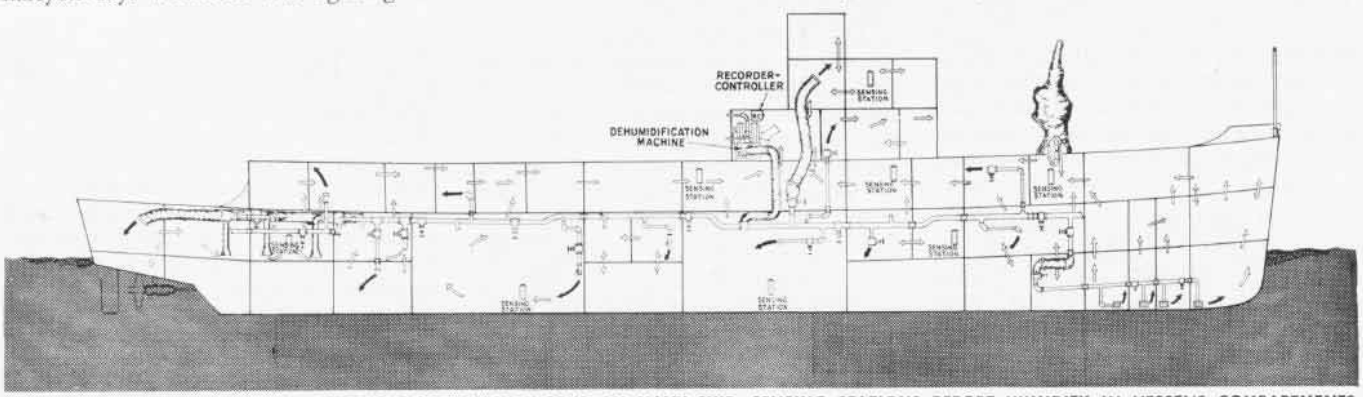


CHART SHOWS HOW TYPICAL DEHUMIDIFICATION SYSTEM WORKS ON NAVY SHIP; SENSING STATIONS REPORT HUMIDITY IN VESSEL'S COMPARTMENTS

GRAMPAW PETTIBONE

Will It Stall?

In the October issue I printed the following problem sent to me by an Ensign in VA-17-A.

"A plane is approaching an airstrip preparatory to landing. It is FIFTY (50) feet high and traveling at an indicated airspeed of EIGHTY (80) knots. The plane stalls at an indicated airspeed of SEVENTY (70) knots. There is a FORTY knot headwind.

"SUDDENLY—the FORTY knots of wind stops—completely—and definitely!!

"WHAT WILL HAPPEN TO THE PLANE?

1. Will it stall?—or—
2. Will it continue its approach in a normal manner?
3. Will it lose FORTY knots airspeed the moment the wind stops?
4. Will the airspeed indicator in the aircraft indicate FORTY knots lower at the instant the wind stops?"

I wish that I could print all the letters that came in with answers to this problem, but that would take the entire magazine and then some. However, these statistics may be of interest. Of those who wrote in, 56% said that the aircraft would stall, or make an uncontrolled descent to the runway; against 44% who maintained that the only change would be an instantaneous increase of 40 knots in ground speed.

On both sides of the argument the readers were quite sure of their answers, and many upbraided me for not giving my answer when the problem first appeared. Those who were sure the plane would continue its approach in a normal manner were somewhat more prone to sign their names to their letters than those in the "will stall" group.

In the intervening weeks since the problem appeared, I have learned that it is very difficult to get anyone to change his mind on this problem once he thinks he has the correct solution. Its even harder if he has a bet on with someone and has the wrong answer.

After buying some ear plugs and making arrangements to be out of the office when the magazine comes out, I've finally decided to give my answer. Here it is:

The problem as stated introduces a condition so artificial that you must forget some of the rules that you learned early in flight training and navigation concerning the normal relationship between wind, groundspeed, and airspeed. In actual flight the situation described in the problem does not occur. Winds

do not cease instantaneously, they die down.

We can duplicate such a situation in the laboratory, but just for fun, let's imagine that we have constructed a giant fan at the end of a 5000-foot runway. We rev the fan up to a point where it is blowing wind down the runway at a speed of 40 knots. In front of this fan we construct a tremendous frame that houses a guillotine-like door which can be dropped to cut off the flow of air in a second or less. A fighter coming over the end of the runway at an altitude of 50 feet is indicating 80 knots just as it reaches the point where the wind velocity measures exactly 40 knots. As the plane arrives at this point the electric eye which we have installed just off the runway is actuated and in turn sends an electrical impulse which drops the door in front of the fan.

The wind ceases! The plane loses the lift and drag imparted by that airflow. Lift is now insufficient to maintain flight. Thrust greatly exceeds drag. All the relationships which existed before we shut off the wind are now out of balance. The plane drops like a rock. This surprises the daylights out of the pilot because he is close enough to the ground to be very conscious of his ground speed and this dropping occurs at the same time that his ground speed begins to build up.

If we assume that his airplane is stable, the nose will tend to pitch down under the influence of the increased angle of attack caused by the settling velocity. If he manages to keep his wings level and eases the stick back just before he hits he may get away with a very hard landing. If not, he'll probably drive the oleo struts right through the wings.

During all this time the pilot is too startled and too busy to look at his airspeed indicator, but even if he had that wouldn't have been too much help. Airspeed indicators measure a difference in pressures and the lag in changing the pressure in the lines would cause this instrument to give an erratic reading. If he had a *perfect* airspeed indicator which was instantaneously responsive to changes in airspeed, it of course would have read 40 knots at the instant the wind ceased and would then have commenced a rapid increase.

One Less Excuse

A lot of Navy time and money is going into the SNJ modification which provides the plane with a lockable tail wheel. For too many months to remember "Groundloops in the SNJ" have been the most frequent single accident type.

It is hoped that this change will result in a sizeable reduction in the number of groundloop accidents. Some changes in habit patterns of long standing will be necessary when pilots make their first cross wind landings in SNJ's with the lockable tail-wheel. Previously a great many SNJ groundloops were caused or aggravated by pilots kicking rudder *too* hard and thus allowing the steerable tail-wheel to swivel freely. So far at least one case has been recorded of a pilot failing to take *sufficient* corrective rudder action in an SNJ with a lockable tail wheel.

Grampaw Pettibone says:

I'm afraid the groundloop is here to stay, but let's hope that we don't have quite so many in the SNJ. Be sure you know whether the one you are flying has a lockable tail wheel, and that you know how to use it. Don't bank on this feature to keep you out of trouble if you've made a poor approach. *Go around again* for that the best insurance against a landing accident. However, if you are on the runway and the plane starts to swerve, you can take quick action with brake and rudder, and you don't need to let your old habit pattern of being very gentle with the rudder interfere with your correction.

Some Bird

During an hour and forty minute familiarization flight a Reserve Ensign managed to crowd in the following violations:

1. Immediately after take-off he made a pass at a two plane section of SNJ's conducting an instrument flight.

2. Instead of proceeding to the assigned area, he headed for his home town.

3. Since he was on probation for a previous flathatting incident, he was specifically briefed to remain above 2000 feet except when in the landing pattern. Despite this he flew low over his home town and buzzed cars on the highway west of the town.

4. Then he performed a few unusual maneuvers at low altitude and made a pass at a farmer's car, missing it by about 10 feet.

5. After buzzing a farmhouse and a barn, he started down a gully below the tree-top level.

6. Shortly afterwards he severed two power lines which paralleled the main highway.

7. After landing his damaged plane back at his home field, he stated that he thought he had "hit a duck or some sort of bird." This statement showed considerable imagination, since there was about 20 feet of copper wire trailing from the airplane.

While the senior officer present was inspecting the plane the Ensign finished writing out his "duck or bird" statement and left for home.

Grampaw Pettibone says:

By the time this is printed this lad will have faced an Aviator's Disposition Board in accordance with the provisions of BuPers Circular Letter 206-47, and unless I miss my guess, his wings will have been permanently clipped.

Ah, for the good old days of public hangings. We could all have gone and taken a picnic lunch.

Taxpayers Cheer Again

"Dear Grampaw Pettibone:

When the pilots in VA-35 read your story in the August issue of NAVAL AVIATION NEWS about a TBM pilot bouncing one wheel on the runway in a successful attempt to jar the other wheel down, the boys thought it was pretty smart and resourceful.

Today we had a chance to try it out. An Ensign was circling NAAS CHARLESTOWN, R.I., in a TBM-3E with the right wheel down and the left wheel up. He had exhausted all the conventional emergency procedures to get the wheel down, but with no success. He was instructed then to try his luck with the bounce method, which we had been holding in the medicine bag as a last resort pill to end all ills. But alas, after three skillful bounces on the duty runway that would have topped a "drunken" clown's exhibition in a flying circus, the stubborn wheel refused to budge. The pilot was as disappointed as all the spectators, but he was still game.

He was next instructed to lighten the plane by burning as much fuel as possible and keep repeating emergency procedures. Finally, diving at 250 knots and coming back sharply on the stick for a reading of 6 G's—at the same time pushing down on the wheel lever—the wheel suddenly popped loose.

A normal landing was made. The Ensign admitted that the "G" force was a little more than he had intended pulling, but a close check of the airplane revealed no structural strain.

So, it seems that the same magic won't always work on temperamental aircraft no matter how clever. It all goes to prove that each case is a little different, and the pilot has to brew his own pot of tricks.

C.O., VA-35

Ten Miles Up

Here's a very interesting pilot's statement which accompanied an accident report on an FJ-1 that crashed during the Bendix Air Race:

"I was enroute from Long Beach to Cleveland, participating in the jet division of the Bendix Air Race. To determine fuel consumption as accurately as possible, I was plotting fuel aboard vs. range in nautical miles, and observing the trend of this line as the flight progressed. At Salina, Kansas, my fuel aboard began to approach the minimum "fuel on board" curve, and it became apparent that it would be necessary to obtain better mileage per pound of fuel to reach Cleveland. Wind predictions indicated Northwesterly cross-winds in this area, developing into a 45-knot quartering tail wind in the Toledo, Cleveland area.

I therefore decided to climb to 41,000 feet to obtain better fuel consumption, reasoning that if I experienced any difficulty due to lack of oxygen, I could immediately descend to a lower altitude. The slope of my fuel plot began to shallow out slightly, but the situation was still marginal. Upon reaching Burlington, I felt very alert and comfortable and climbed to 42,000 feet. My oxygen safety pressure valve was turned on, and everything appeared to be functioning properly.

I was very anxious to finish the race, and as I came closer and closer to my destination, my excitement in winning the race far outweighed my better judgment. I had convinced myself that my safety pressure regulator was sufficiently effective to permit to exceed the oxygen ceiling by just a "few thousand feet," and thereby obtain a few extra knots of wind and conserve my fuel. At this point, high clouds had restricted visibility to a cone of approximately 30 or 40 degrees from the vertical, and I was devoting all of my attention to navigation, and trying to get a good ground speed check. I failed to devote any further attention to oxygen and altitude.

I do not remember the last half hour of the flight too clearly. The wind predictions had been erroneous, and I was apparently getting a strong southerly crosswind and possibly a component of head wind. I became confused and felt very tired, but the possibility of anoxia did not occur to me. I tried to contact Cleveland and advise them that I was approaching the "push-over" point, but I could not speak clearly and failed to establish contact.

Somewhere short of the south leg of Toledo radio, I suddenly felt very cold and faint and my skin began to crawl. I suddenly realized with dismay that I was anoxic. I cracked my emergency oxygen valve and pushed over. I don't believe that I actually lost consciousness at any time. I was aware of the plane's rapid descent in a steep spiral but I made no effort to level the wings. I do not know how low the plane got, but I soon found myself in a shallow climbing turn at 10,000 or possibly 20,000 feet.

My fuel gauge read almost empty, and I was headed south. I felt very dazed and slightly ill. I tuned in Cleveland radio and found that I was south of my track. Toledo radio indicated I had passed Toledo. Visibility was five or six miles at my altitude. I headed Northeast toward the shore line and tried to establish my position. The country below was heavily wooded, and I failed to sight an airport in the vicinity. When my fuel gauge read empty, I decided to land in a nearby field, wheels up. I turned off my switches, oxygen valves, stopped my engine, touched down in a level attitude with full flaps and skidded over the ground for approximately 850 or 900 feet. Then a slight hill launched the plane into the air again and the plane headed for a wooded area.

I tried to keep the plane pointed between two large trees and pulled my arresting hook release handle. The plane struck a barbed wire fence and passed into the wooded area. Although the plane was traveling very slowly when it entered the wooded area, the right wing struck a rather large tree, making an indentation of approximately six inches in the right leading edge of the wing. The left wing contacted another tree as the plane came to rest. I sustained no injury whatsoever. I climbed out of the plane to survey the damage. I disconnected the battery, pulled all circuit breakers, and hung the "guns loaded" sign on the gunsight, (although the "belts" had not been fed to the guns).

In exceeding the 40,000-foot oxygen ceiling, I realize that I violated specific instructions from my Commanding Officer. The only explanation I can offer, which I fully realize is a very weak one, is that I never intended to exceed 38,000 feet during the flight, but by a snap decision in flight, and a reluctance to drop out of the race, I elected to climb higher and by exercising caution, to finish the race with a safe margin of fuel at my destination."

Grampaw Pettibone says:

This fellow's experiences should serve as a warning to all high altitude fliers. His oxygen equipment was functioning fine until he decided to go "a few thousand feet" beyond the safe limits.

I'm sure he realizes now just how lucky he is to be alive after this close shave.

AND THERE I WAS...

Rugged Duty

WHILE THE stateside duty boys are oiling up the office chairs and griping about the fouled-up air-conditioning unit, the lads in the fleet are hitting the ball.

Recently Commander Renfro of ComNat-Asia staff, took an inspection tour up Tsingtao, China way. During the trip occasion arose for a hop into Peiping. There the only available quarters were in the Wagon Lits Hotel. In addition to just average two-minute room service, there was a rickshaw boy for each guest, two-inch steaks, strawberry shortcake with trimmings.

Water was unfit to drink, so the inspection party had to keep dehydration at arm's length with wine and beer. Stated Commander Renfro, "It's the first time I ever brushed my teeth with beer."

Kept his teeth clean, however.

Strategy

DUE TO a series of wrinkled wings among its AD-1's, VA-6-B was temporarily based ashore at NAS GUANTANAMO during February. Orders were received to fly back aboard the *Coral Sea* by the end of the week.

On Tuesday, the commanding officer called in the exec, maintenance officer, and the leading CPO for consultation. The leading chief was asked if all aircraft could be made ready to fly aboard in three days. To this the chief replied emphatically, "No, Sir!"

The commanding officer thought long and hard. All the pilots adjourned to the club, and sat drinking Hatuey, secure in the belief that they were all set for another week end on the beach.

Bright and early on the third morning, however, all planes were "up" and the entire squadron flew back aboard ship. In answer to many puzzled inquiries from the pilots in the ready room, the skipper's comment was:

"Simple. I just told the chief that I would declare the third day a crew's holiday if we had 100% availability at the end of the second day."

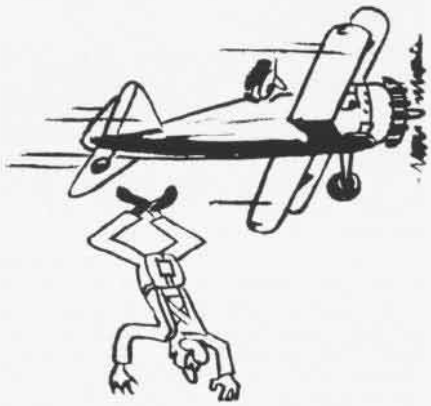
GLEN B. BUTLER, LT. CDR.
CO, VA-6-B

Who's Lost Now?

THERE was an instructor who during the war had been transferred from the "University of the Air" to a West Coast primary base to instruct in *Yellow Perils*. Being a "hot pilot" from Corpus, he ran through the instructors' syllabus in short order and was assigned his first student, a lad who had 10 hours and one solo at "E base."

Our hero, during his first familiarization hop with the cadet, grew tired of sleighing around the countryside seeing local points of interest, and decided to wring his charge out before returning to the field.

His first and last maneuver was a slow roll, during which he and the airplane parted company, due to the fact his safety belt was unfastened. His chute saved him.



Later on he found out his man made it home safely, after mildly disrupting the local traffic pattern and ruining the operations officer's happy frame of mind. After several lurching bounces, the runaway settled down to taxi back to the line where the irate duty officer awaited for him.

Climbing hurriedly out of the plane, he rushed to the duty officer and took the initiative with the comment: "I'm going to resign! That's a heck of a way to solo a guy!"

Later, when the incident had been explained to everyone's satisfaction, a yeoman offered the "yellow sheet" for signature. After writing in the usual "normals" over its face, the cadet contemplated the section headed "Remarks."

After a moment's thought, he entered these deathless words: "Lost instructor."

Belay the Salt!

IT WAS back in the winter of 1943, when the V-11 indoctrination class of officers were being put over the jumps at Dartmouth College. They had two months to absorb navigation, seamanship, and ordnance, to make them full-fledged naval officers.

Heavy accent was placed on correct terminology and the talk was saltier than the air in a DD's bilge. One day the wife of the skipper of the school "came aboard" the "bridge" (the administration building) to look for her husband.

"He's not aboard, ma'm," the 60-day wonder who was watch officer advised her.

"Do you know where he is?" she asked.

"No ma'm," he replied. With a sweep of his hand indicating the small town of Hanover outside the door, he added: "But he's around the harbor somewhere."

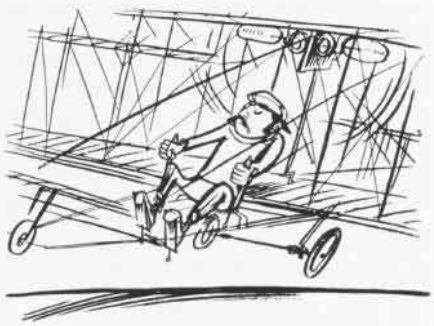
With This We Agree

BACK IN the days when people who saw aircraft (or flying machines) in the air still said: "It's a lie!", military geniuses were trying to find new uses for the gadgets. Except for observation, aerial warfare had not passed the brick-throwing stage.

The Navy's aviation history unit ran across a story about the early days of aerial bombing which should interest today's bomb-droppers.

During the Italo-Turkish war in 1911, one Lt. Gavotti strapped himself into his birdcage airplane and headed out across the Libyan desert with something like an artillery shell between his knees. Finding a group of Arabs in the wastes, he went to work on his gadget, attaching fins and a fuse.

Using "seaman's eye", he gingerly dropped the bomb over the side, with the prayer that the touchy contact fuse wouldn't bump any part of his machine on its way. For the next few moments he was too busy keeping his machine in the air and right side up to observe his drop.



On his return to base, he wrote the following report:

"While it is possible to assemble and fuse the projectile while flying the machine, I am convinced that it would be more satisfactory to have such instruments armed and fused beyond the bombardier's embrace."

● NAS MINNEAPOLIS—During his spare time, an ordnanceman at this station recently designed muzzle plugs for F6F aircraft which have proved most practical. On the two inboard guns, plugs are held in place by a metal sleeve, while a friction-tight rubber gasket does the job on the outboard gun. Outboard they fit inside the blast tube and inboard they fit over the outside. Easily removable, the plugs give a weather-tight seal.

UN-usual Duty In Palestine

OBSERVER GROUP CLIMBING BACK ABOARD MATS PLANE IN TRIPOLI FOR LAST HOP TO RHODES

One of NANEWS' *writers recently spent two and one half months in Palestine as a United Nations observer. As a matter of interest, and because it "might happen to you," this pilo's account of UN duty follows.*

AFTER being notified that a certain naval aviator was about to become an international diplomat (temporarily), via United Nations in Palestine, a number of things happened in bland and rapid succession.

Orders were received packing the recipient off to the State department for duty with the United Nations mediator for Palestine. These orders included a number. ONE priority and permission to travel by military or commercial air. The dispensary delivered a sizable number of shots in the arm, using, as usual, a dull needle. A lecture was given by a returnee who somehow imparted the impression "you'll be sorry" while briefing the outgoing group on the Middle Eastern situation.

The lecture apprized us of the fact that the Jewish peoples of Palestine, in good historical fashion, were in the midst of carving a land for themselves against the armed protest of the late owners of said territory and their neighbors.

So, the United Nations, in the interest of world peace, forced a truce, assigned a mediator and set out to settle the affair bloodlessly. A first truce terminated before things were stitched up; the war continued for a few weeks, and now a second truce—this one to be permanent—was going into effect. The job of the UN observers was to watch both sides and report to the mediator violations of the truce.

Under the direction of the mediator, the observers are supposed to see that neither side takes advantage of the truce to accrue a military advantage during the truce through the importation of arms, supplies, equipment, personnel and whatever else it takes to run an efficient war.

The *status quo* is to be maintained and the lines are to remain fixed as they were at the "cease fire." Of course the UN or the observers have no recourse to force, so if there are violations, a nice neat report is to be made out and sent to the mediator.

As a matter of fact, there aren't too many violations of the truce *observed*. After all, both the Arab and Jewish people are as astute as any, so aggressive military activity is more or less confined to areas where observers are not. Certain airfields are closed to observers for "security" reasons. And there are hundreds of miles of border and coast line that cannot possibly be thoroughly patrolled by the 350 observers and half dozen aircraft available to cover Israel and the seven Arab countries.

When incidents occur, such as a small battle over a town, or the forced occupation of a hill by one or the other sides, with some hundred or so casualties, the observer goes out to decide who is the guilty party and a complaint is registered. Sometimes a compromise is worked out which is acceptable to both sides; if not, it becomes another incident to be marked up on a large scale chart in headquarters. These "violations" about even out on both sides. And the road to peace is rocky and filled with much paper work.

A couple of days after initial notification of forthcoming orders the new observer was firmly ensconced in the Zion Hotel in Haifa, Israel. The sun rose some seven hours earlier, otherwise the weather was wonderful. The climate along the Palestine coast is what the Miami Chamber of Commerce claims is typical Florida weather.

In Haifa, headquarters for the UN, per diem started at the rate of $15 a day, Don't let this feature turn your head; by living very economically, the 15 skins almost pays expenses in the war-inflated Palestinian economy. (Remember this line to give the wife upon returning, but broke, to the US.)

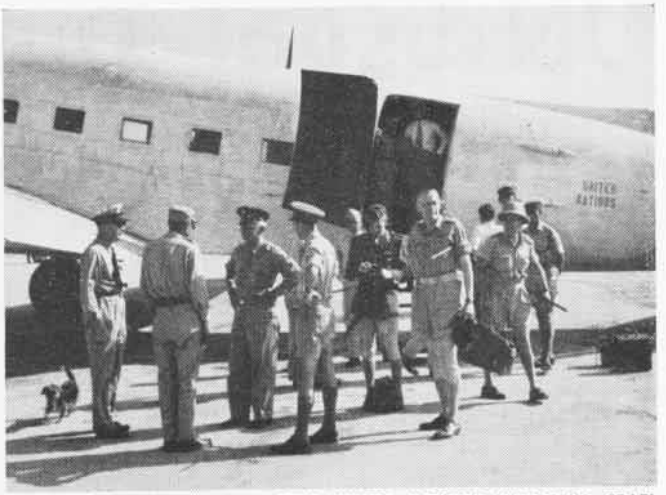
At headquarters, a rotation system of duty should be functioning by this time, and as a newcomer it'll be Jerusalem duty for you. In Jerusalem the front line splits through the middle of town, with opposing armies drawn up some 40 or so yards apart in places. This setup creates friction and the boys need target practice. So they practice firing back and forth across "no man's land" where the observer spends much of his time.

THE OBSERVER has no guns and no armor plate and is not impervious to gunfire. Although, up to the Count's death, no observer had been killed in the Jerusalem area, there were dozens and dozens of reported "near misses." Unhappy observers are a constant target, the food is lousy and there isn't enough water in Jerusalem. In other words, things are much better in Jericho, or almost anywhere else.

If a choice of duty can be made, Beirut and Damascus are tops on the Arab side; Tel Aviv and Haifa on the Israeli side. Of course, there will be no choice; duty is handed out by the staff and it'll be on a rotation basis—a year in Jerusalem, two days in Beirut, and what not.

There are some 350 UN observers, 150 technicians and a dozen or so staff members. All of the observers are officers drawn from the military services of four different countries. There are 150 American observers, 150 French and 50 Belgian. Prior to Count Bernadotte's death, there were a number of Swedish officers on the mediator's personal staff. Drivers and technicians consist of 150 U. S. Navy, Marine, A. F. and Army enlisted personnel. In addition there are about 50 United Nations people belonging to the secretariat.

DEHAVILLAND 89 DRAGON-RAPIDE BEING USED BY UN IN MIDDLE EAST



ASSORTMENT OF UNIFORMS DEPICT UNITED NATIONS EFFORT IN ISRAEL

WHEN representatives from the various services of four countries are tossed into a United Nations group there are bound to be personnel and personal difficulties. Just saying "good morning" to your roommate in a language that can be understood by both can be a problem.

But mere internal organization troubles aren't enough! This multilingual and motley observer group must work with the peoples of seven, count 'em, seven Arab countries and Israel. (The Israel nation is comprised of emigrants from every country in Europe and a good smattering from other parts of the world.)

One big advantage to this sort of situation which is really conducive to peace, is that one can vent his feelings in his mother tongue without disturbing the equanimity, pride or ire, of his some-other-language speaking colleague. This works both ways too, very few people mind being called the "son of a camel" in Arabic or "the offspring of a pig" in Hebrew, and it probably does the irate speaker a world of good. It's hard to stay mad at a guy who smiles at your insults.

To a naval aviator, the UN aviation angle in the Middle East is of interest. This interest is about the only aviation medium the pilot-observer has. For in Palestine the UN pilot is an observer first, and a flyer not at all.

The UN air fleet consists of four Douglas *Dakotas*, five Airspeed *Consuls*, five DeHavilland *Dragon-Rapides* and, once upon a time, four Taylorcraft *Austers*.

Number one craft of the international air wing, plying the skies of the Middle East, flying the snow-white and azure-blue colors of the UN, is the grand old C-47. Big job of the C-47 is a daily "milk run" which originates in Beirut, flies to Haifa, Tel Aviv, Kolundia (Jerusalem), Gaza, Haifa, Damascus and back to Beirut. The planes are stationed in Beirut, which has the best field facilities and is by far the top liberty town. It hits Haifa twice, which is headquarters, and the other points get a once over lightly.

Second major job of the C-47 is that of carrying UN finance personnel to and from paying off the observers. Trips are also made to Cairo and Athens for maintenance, and various other places around and about for various other reasons. The milk-run carries observer personnel as they are gaily shifted by headquarters or forced to evacuate due to a disagreement with some local chieftain. It also carries eggs, steak and brocade from Damascus and nescafe from Beirut; and occasionally it is fired upon when it misses the corridor at one of the destination airports.

THE DAKOTA is a tried and true aircraft, which is probably what is wrong with the ones in Palestine. They have been tried and found true too many times. At this point they are still being tried, but not always are they being found true. Minus a bit of cowling here, a cylinder there, a copilot yonder, they still deliver most of the time. Maintenance is not non-existent, but it isn't up to stateside standards. In Palestine, if the engine turns over the plane is practically airborne.

Pilots of the C-47's are Air Force personnel on temporary duty down from Germany. They fly into the 1800' strip at Amann, land and takeoff on the built-over-a-hill airport at Kolundia, and apparently don't even notice traffic on the main highway that crosses the center of the Kolundia strip. With a loud buzz job, they shoo burros, camels and strangely-dressed Arab Legion troops off those runways that double as drill fields, before landing, with splendid *savoir faire*. Upon questioning, it is learned that they are fugitives from the Berlin airlift, where they have been flying well over 100 hours a month for long enough to be glad of the change. They do become a bit disturbed when a landing is bounced or they have to go around due to the vagaries of a stray camel on the runway, and as a result are severely criticized by one of their passengers. However, and heigh ho, it's all in the day's work! As one of the boys stated after being shelled by mortar fire at Kolundia, and being forced to takeoff uphill and downwind, "It's a great life, hope we live to enjoy it." And he's right.

The five Airspeed *Consuls* are flown by contract British pilots. Inasmuch as Britain doesn't recognize the new Jewish state, British subjects are not welcomed aboard in Palestine—unless one considers the brig aboard. So the *Consuls* are restricted to flying on the Arab side. They fly patrols along the coast of Israel, but in case of engine failure, best they make it back to Arab territory.

The *Consul* is somewhat similar to our JRB, a bit smaller, but carries the same number of passengers, five. It is largely used for special flights, coastal patrol and courier service between Arab points.

The DeHavilland 89 *Dragon-Rapide*, better known as simply the *Rapide*, is a grand old twin-engined biplane. It carries three passengers and a protesting pilot. It is fabric covered and strictly "old-hat." Operating on one engine it can limp along losing altitude far enough to find an airport, sometimes. However, it can't operate indefinitely on single engine. Or, as the pilots put it, "It definitely can't operate single engine." The man who rented the 89's made the error of assuming that all airplanes naturally are complete as airplanes should be. As it happens, all of the *Rapides* aren't equipped with radio gear. Two of the five planes came with radio, three without. The

planes that do have radio gear have a battery for starting only and a miniature propeller generator provides electrical power. So the planes must be in flight before the radio can be used. This means the pilot holds interminable conversations with tower controllers explaining why he didn't request taxi instructions, or why he went off the air when he hit the deck. This expedites take-offs and landings and keeps tower operators happy like mad.

THE *Rapide* pilots are contract KLM pilots of Dutch nationality. Just another little rock in the road to peace. It's amazing how few people understand even excellent Dutch, if they aren't of Dutch ancestry. Fortunately the pilots are clever fellows and manage to make sign language, French and Swedish get them by. The way many Europeans speak a half dozen languages is apt to give the average American an inferiority complex after a time.

The lack of radio equipment in three of the *Rapides* keeps these on the ground. Nations at war, even during a truce, are touchy about planes flying around whose identity they aren't too sure of. Both sides demand a 24-hour notice on all flights. In addition, all flights must conform to a strict time schedule, plus or minus 5 minutes, and keep within the limits of a fairly narrow approach line at most of the airports.

And towers must be contacted before landing. If a tower receiver is out—which does happen—the pilot has to go away and come back another day, in one piece. This point was further driven home by the shooting down and killing by Arab irregulars of two observers in a radio-less plane which didn't notify the field of their intended arrival.

The fourth aircraft type, which is no longer in use by the UN due to the above incident, but which had a very interesting history while it lasted, is the Taylorcraft *Auster*. A fighter type, the sturdy *Auster* was used to pick up personnel in goat pastures and for observation and courier hops. The *Auster* is much like our own Taylorcraft or *Cub* when properly maintained.

TWO FRENCH PILOTS DOUBLE AS AUSTER MECHS

AUSTER WAS GROUNDED DUE TO GAZA INCIDENT

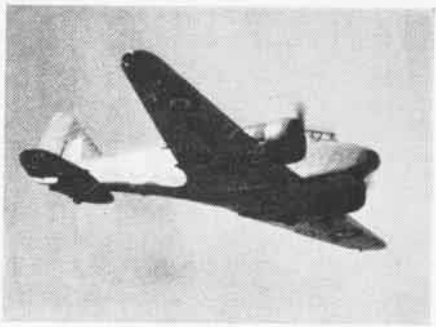
It is powered by a 130 hp *Gypsy Major* engine, takes off at 45 mph, cruises at 80 and climbs not at all.

The *Austers* in Palestine had seen much better days, but painted white they proved most dependable craft. They carried no radio and their batteries had no generator. Starting was a complicated two-handed, two-man operation whereby one individual pumped the primer with one hand, held open a choke with the other until gas streamed from the overflow pipe. Then if the battery was working, it was cranked by starter, if not, by hand. Then, when it didn't start, the cowling was removed from the starboard side and the carburetor was lightly tapped with a small steel sledge—object being to loosen up the float so the carburetor could take a little gas. After this careful operation, a few dozen twists of the tail and the engine would roar into a steady stutter.

THE MAINTENANCE setup of the *Auster* was "butched" up more than usual due to its being a British military plane used in Palestine, and the British still continuing unpopular in Israel. These planes were based in Haifa and had to be flown back to Amann—nearest RAF base—for maintenance. Of course they couldn't be spared until they quit running, which created something of a problem getting them back across the line. For one reason or another the plugs in the *Austers* foul up easily, so a mag drop of 250 on one side was normal, providing the other mag wasn't dropping off more than 300.

The *Auster* does a very creditable 30-degree bank and can easily recover from this dangerous maneuver if full opposite rudder and aileron is applied for a few minutes. (We're sure they didn't come from the factory this way, Mr. Taylor, but these had been used.) The *Auster* comes equipped with barn door flaps which have much the same effect as two battleship anchors tossed over from a medium-sized sail boat. With full flaps, full power and a small tailwind, it creeps in at about 40 mph.

The *Austers* were flown by three or four French aviators, a Belgian or two and a couple of naval aviators. The two naval aviators did most of their flying illegally and without official notice. But flight time is flight time. One of the French aviators was a top-flight aerobatics ace and the rest of the pilots were frustrated fighter boys. What happened to the *Austers* shouldn't have happened.



AIRSPEED CONSUL CAN FLY ON ARAB SIDE ONLY

One of the Frenchmen, a lieutenant, was assigned as pilot to a somewhat crochety Colonel from another country. The good Colonel wore a set of wings which were for display purposes only. But like *Grampaw Pettibone,* he had decided opinions on how an *Auster* should be flown—and he meant smoothly. To drive away boredom on long 30-minute hops the French lad would turn off one mag. With both mags operating at maximum efficiency the *Auster* engine sounded like a one-lung Maytag, but with one mag out of business, it sounded like a very old rooster crowing in his last dawn.

The RPM would fluctuate some three or four hundred turns, and generally the Colonel felt it didn't sound or feel safe. The Lieutenant and the Colonel would then discuss the advisability of returning to the nearest airport. The Lieutenant would suddenly have trouble understanding the Colonel, the motor would sputter as the conversation got louder and louder. Finally the Lieutenant would affably offer to trade his pilot's seat in front for the Colonel's passenger seat in the rear, or "who the hell is flying this airplane?"

Trying to change from the rear to the front seat of an *Auster* in flight would be comparable to passing a fellow traveler halfway across the Grand Canyon on a tight wire. The Colonel would lapse into a pained and pregnant silence while contemplating making an official protest to the Minister of French Military Affairs.

The French lieutenant by the way, received his wings a couple of years ago at Pensacola.

Well, it was a great little tour of duty. If you happen to get orders, "Good luck." See you next truce.

Crash! Then What?

YOU ARE flying a Navy Beechcraft over the Rockies near Denver, with three passengers aboard. You get lost in the clouds and run out of gas. Fortunately, you find a hole in the clouds, make a belly landing in a small clearing and knock down a farmer's outbuilding.

Do you know what to do next? Probably not one naval aviator out of 10 does, so Bureau of Aeronautics has issued *Aviation Circular Letter 81-48* setting down things to do in case of a plane accident or forced landing.

Here are the steps it outlines for the pilot to follow:

1. If damage is minor, report by best means available to the officer controlling the flight if more than a two hour delay is anticipated.

2. In case of injuries or damage requiring assistance, the pilot or the senior naval representative in the vicinity will report by phone, telegraph or dispatch to the controlling unit or station. This report shall include as much of the following information as is available:

Bureau model and number of plane.
Unit to which plane is assigned.
Time and date of accident.
Location of accident.
Purpose of flight.
Type of clearance issued.
Type and cause of accident.
Weather conditions, if involved.
Full name, rank or rate, service branch and duty status of pilot and passengers.
Injuries, if any, to passengers or bystanders.
Damage to plane and description of any material failure.
Statement of search or salvage operations where personnel not recovered.
Whether or not plane should be repaired on the spot; if so, what service is needed and spare parts required.
Location of nearest airport or safe landing area and nearest telephone.

4. Damaged aircraft should be kept under naval, military or civilian police guard until repair or salvage is made.

5. The controlling activity turns in a dispatch report to Chief of Naval Operations on Class A, B or C damage accidents or those involving A or B injuries. Minor accidents should be reported only if they involve planes other than Navy, prominent civilians or damage to public or private buildings. Cases of missing aircraft are reported the same way as A or B injury accidents.

6. In cases of plane wrecks in which personnel are killed or missing, the report to CNO may be compiled with the BUPERS initial casualty dispatch.

'BEAST' OUTFITS CHANGE

A NUMBER of Navy squadrons have abandoned their SB2C's for F4U's and are training as high altitude interceptor outfits, with the attendant change in flying and fighting techniques.

VA-14 reported its first problems under the new job were getting to altitude fast and mastering the entirely different technique of operating in rarefied atmosphere. Acceleration and deceleration are problems from 20,000 feet on up, and basic tactics become more than ever a matter of judgment and alertness. Pilots found that they make only one mistake above 25,000 feet since they do not catch up to make another.

With no qualified fighter pilots in the squadron, CAG-1's fighter outfits were asked for aid in the form of lectures by experienced men. CAG himself came to the aid of the squadron and led several fixed gunnery flights.

VA-134, which also changed over to F4U's from *Helldivers*, reported it had "beat its way through the fighter syllabus in one month" and joined CAG-1. Flying six days a week, all available flying time was devoted to mastering the new turning radii and higher speeds encountered.

Gun camera assessing proved troublesome when the cameras were installed so the film was exposed on a horizontal plane, which made the present assessing machines useless. The squadron solved the problem by projecting the pictures 90° to normal axis and watching the runs as a complete motion picture.

Other squadron news notes include:

● VMF-211—In performing escort tactics when interceptors are the same type as the escorting fighters, confusion arises in telling "friendly" from "bogey." This squadron hangs Mk 51 drop tanks on interceptors to help distinguish.

● VA-15—This newly-designated squadron fired at a group of tanks in the Carrizo impact area near El Centro. Using 5" HVAR's, they scored nearly 80% hits, a good score for any type plane.

● VA-175—This squadron established a new squadron record of 1000.1 hours of flight time during July while based on the *Coral Sea* on the 1948 midshipman cruise. This record was with 22 pilots and 21 planes. The old record was 949.9 hours with 29 pilots and 27 planes. Most landings were by the squadron's skipper Lt. Cdr. G. Macri, with 46 of the 881 total carrier landings made by the outfit without mishap.

● VF-13—During a reshuffle of aircraft which made CAG-1 an all-fighter group, this squadron was for a time a composite squadron. It had F8F's, F6F-5N's, TBM-3Q's and TBM-3E's. Humorous sidelight: The engineering officer took up a collection from all pilots to help buy a hydraulic jack for tire changes. Seems that the Navy's budget was cut.

● VF-12—The squadron had a little difficulty in qualifying its F8F pilots for night landings. Weather was clear and a good horizon was visible despite no moon. Planes had non-tumbling attitude gyros and did not have rate of climb indicator, radio altimeter or flame dampeners for the exhaust stacks.

Without the latter, night vision forward was non-existent, necessitating an instrument approach until in the crosswind leg just prior to picking up the LSO. VF-11 reported the same trouble, due to lack of instruments, with radio altimeters since being installed in division leaders' planes.

Aircrewman Rules Are Set

CNO Outlines Skills Gunners Need

Chief of Naval Operations has issued ACL 66-48 setting forth detailed operational duty requirements for designation as combat aircrewmen.

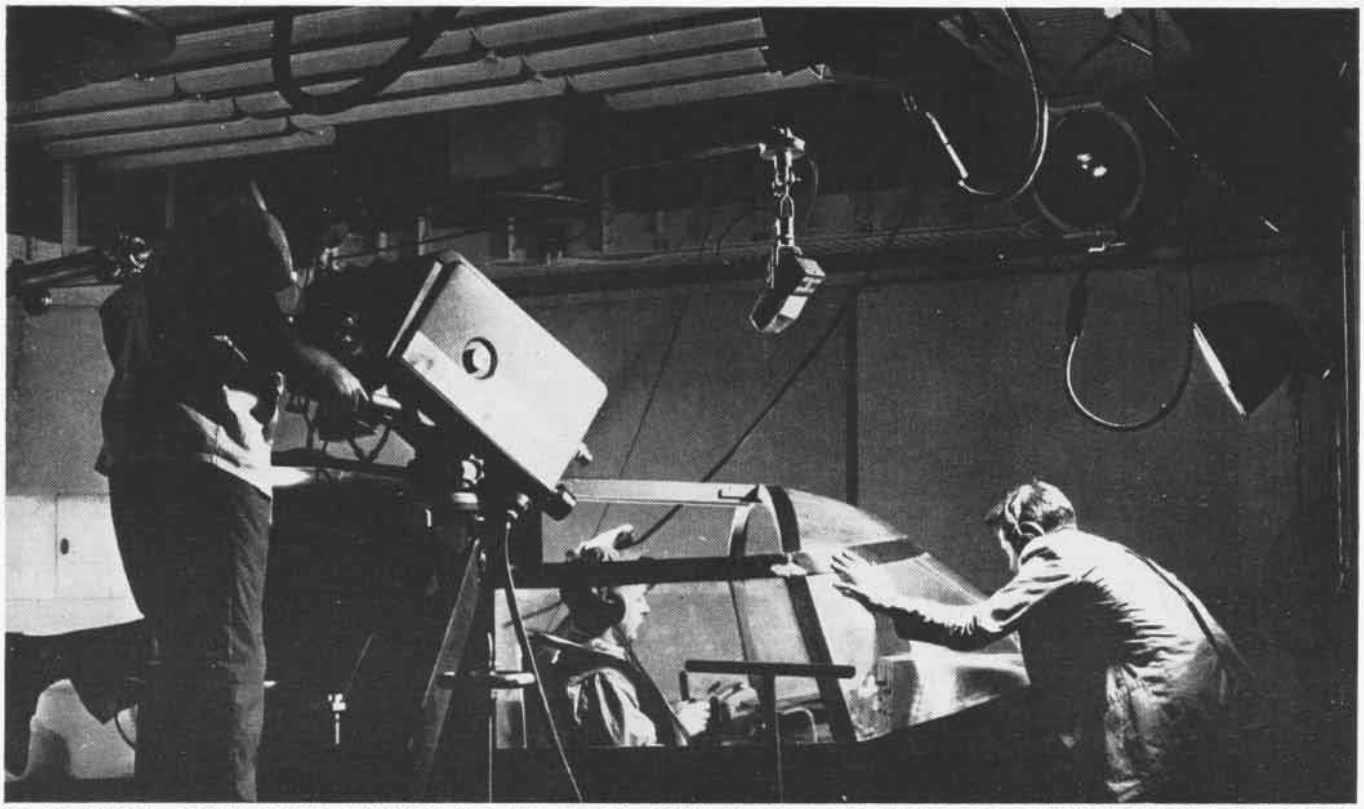
In advance aerial gunnery, the aircrewmen must demonstrate ability to field strip and assemble machine guns, analyze troubles, prepare a gun for firing and clean it. He has to boresight, use all types of sights, repair them and estimate ranges.

When applicable, he has to be able to operate turrets, give them checks, recognize malfunctions, load them and manually operate them. He must show ability to pick up a target, track it and get five percent hits on a towed target at from 500 to 700 feet.

His training also includes communications, survival and ditching, first aid and recognition of current U. S. aircraft.

Although Navy gunnery schools at Purcell, Yellow Water and Miami closed at the war's end, training of aircrewmen is still being done by the fleet. Total requirements for gunners still remain high despite the fact Navy attack planes no longer carry them. They still are being used in P2V's, PB4Y-2's, PBM's and in TBM's still with the fleet. P4M and P5Y aircraft also will have gunners.

Cdr. E. P. *Aurand, skipper of the Navy's first FJ-1 squadron, discusses strategy of the Bendix jet division race, in which he placed second, with Marvin Nyles, aviation editor of the Los Angeles Times. Aurand finished close behind Ens. Francis Brown of his squadron. Brown's winning time was 489 mph for the 4 hour and 10 minute flight.*



IN THE SPECIAL DEVICES CENTER TELEVISION LAB, THE CAMERA MOVES IN FOR A CLOSE-UP OF TWO STUDENT PILOTS IN A P2V MOCK-UP

VISION UNLIMITED

OUT AT Sands Point, Long Island, is an "idea factory," dedicated to making life easier and safer for the men who pilot the Navy's planes and operate the Navy's machines and equipment. This is the Special Devices Center, whose products have helped revolutionize Navy training techniques.

Many an aviator, weaned on synthetic trainers at flight school, was able to meet his first test in combat more successfully for this training. The same thing held true for gunners, radiomen and the hundreds of other Navy personnel who acquired knowledge and skills via the special device method.

Although the combat factor is absent today, the practical type of training provided by these devices is still paying off. The Center's new experiments in utilizing television as a medium for instruction may have a far reaching effect not only on Navy training but on mass education throughout the nation.

Described by an aviation writer as a "gadget heaven," the Center in many respects is a huge working laboratory. Here no job that will help fit the men to the machines—or the machines to the men—more effectively is too large and none is too small. The same section, for example, that developed the mighty celestial navigation trainer, so complex a device that it required a two-story building to house it, recently put out a little hand-size plastic card to enable aviation personnel to practice Loran computing in their spare time.

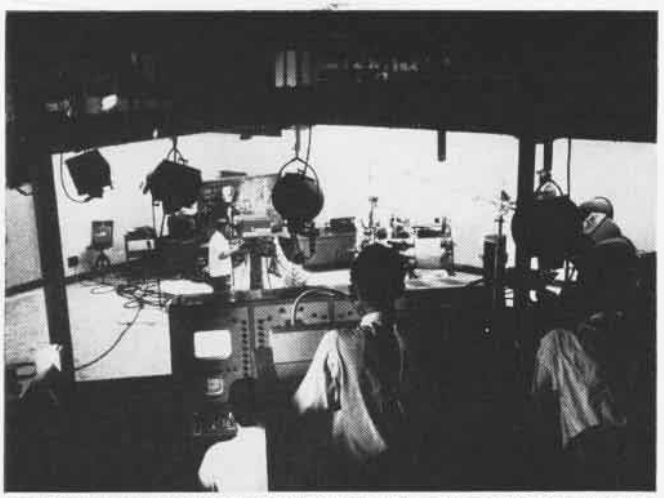
In all, more than 700 different types of training equipment, developed by Special Devices, have been distributed to the Navy, Army and Air Force for use by their personnel.

And, if conceiving the idea for some device, doing the research on it, developing models and prototypes, getting it ready for production, testing and evaluating it were not enough, the experts at the Center are continually figuring out new ways to utilize it. They plan new modifications that can be added to it to make it serve more purposes. Their job also includes setting up devices in the field, servicing them and teaching field personnel how to utilize them most effectively and how to repair them.

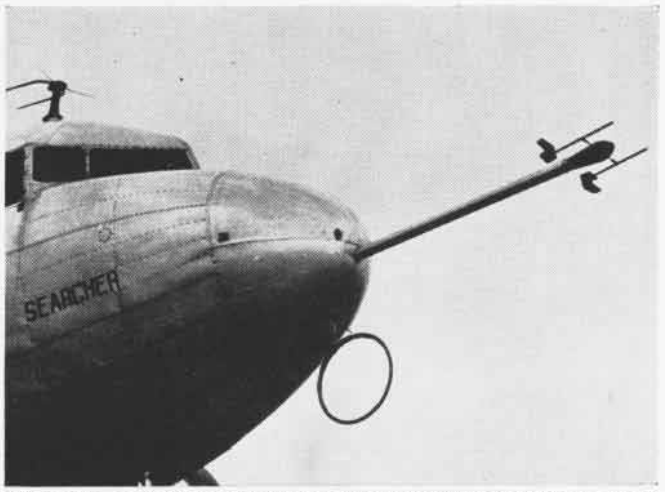
To do this king-size job, the Center is organized along the lines of a large manufacturing concern. In the technical divisions, which comprise flight, radar and communications, armament, human engineering, navigation and seamanship, research, visual design, film, computer and shop sections, highly skilled technicians conceive and develop devices. The contract division deals with manufacturing concerns that supply the finished product. Maintenance allocates devices to the field and provides for their servicing. Administration keeps the whole organization running on an even keel.

How many lives and how much money have been saved through the use of these special devices cannot be accurately computed. However, to train a crew of eight men to operate a patrol plane costs $10 an hour in a synthetic trainer as compared to several hundred dollars in combat aircraft. The Army figured that bombing trainers, produced for them by Special Devices at a cost of $2,500,000, saved 119 lives, which would otherwise have been lost in training accidents, as well as $24,855,684 in combat equipment.

PRESENT developments in the special devices field are keeping pace with the new weapons, planes and machines now being produced by the Navy. They still include synthetic devices, such as operational trainers, which place the student under training in simulated combat conditions; teaching aids or smaller devices designed to teach some principle or portion of a complex subject; and research tools, such as functional cockpits for use in connection with aircraft design or computers for applied research in aerodynamic design.



CONTROL ROOM TECHNICIANS WATCH DEMONSTRATION FOR VIDEO CLASS



THE ANGLE OF ATTACK SENSING DEVICE IS SHOWN INSTALLED ON R4D-6

Now It's Training Via Television

TODAY THE technicians at the Center are pioneering in an entirely new field. Through a series of evaluation tests, they are seeking to determine the adaptability of television to Navy training needs.

In this project, facilities of the modern television studio, which recently was constructed at the Center, are utilized. This studio, identical with those on regular networks, is equipped with the latest-type commercial television cameras. There are four "live" cameras and one camera for televising motion picture film. The Center also has an experimental classroom which incorporates a television projector capable of any size pictures up to 20 by 22 feet.

The first test in this television evaluation program is now underway. It is under the planning and jurisdiction of the head of the psychology department at Fordham University. In this test, 50 students in the third year class at the Merchant Marine Academy at Kings Point, N. Y., located seven miles from the Center, are being taught two naval science subjects by television. Specifically, one or two lectures on each subject are being telecast from the Center to Academy classrooms each week. The rest of the third year students receive standard instruction.

By comparing the progress of the two groups, the advantages of using television as a medium for instruction will be evaluated. This program will also test methods of television presentation best suited to the medium and to the various subjects.

The Center will conduct similar evaluation tests, utilizing its own classroom. Present plans also call for telecasting instruction via television cables from the Center to selected Navy training activities, such as Reserve air stations, on a network hook-up. In such tests, a voice circuit from the remote classroom back to the studio would permit the instructor to call for questions from each student group in turn, thus further enhancing the realism of the instruction.

The experts at Special Devices believe very definitely that the latest and very best material can be presented to a large number of students at one time with the greatest flexibility via television.

MOST STRIKING of the research tools now under development at Special Devices is the automatic approach, cruise and landing system. This device promises to mark an important step forward in the Navy's drive for safety in aviation.

Phase one of this system, which utilizes the angle of attack as a control parameter, has now been completed by the Minneapolis-Honeywell Corporation and Special Devices Center.

In this phase, the system was installed on an R4D-6. It was flown for a year under all sorts of conditions at NAS MINNEAPOLIS, on transcontinental hops, and in conjunction with the CAA instrument landing system to provide automatic letdown.

TEST FLIGHTS proved the system to be quite successful and indicated that it could be modified for inclusion in other types of naval aircraft. On some occasions the R4D was automatically brought in to touch down at speeds as low as 78 mph. Main chores for the pilot were lowering flaps and setting prop pitch and mixture.

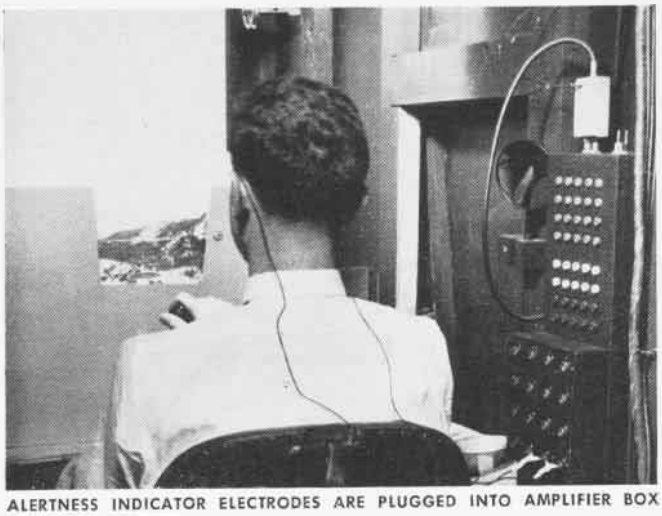
The system is composed of an automatic angle of attack sensing device, an autopilot, throttle control motors, instrument landing system receivers, and an automatic approach control coupler, all working as an integrated unit. Its present weight is 140 pounds which would be lowered in a production model.

Safety features, such as an automatic elevator trim tab control, throttle and control surface overrides, emergency disengage buttons, straight flight and bank stall prevention, have been added to the system. The stall prevention features, when in automatic flight, make it almost impossible to stall in any normal flight attitude.

IN MAKING an automatic approach and landing with this system, the pilot turns on the instrument landing system receivers and engages the automatic pilot as he nears the field. He moves the turn and pitch controls so that he is at the specified altitude and heading for proper entry to the pattern. He then flies a specified pattern until he is lined up with the runway for a landing.

At this point he adjusts the angle of attack (charts giving the best angle for climb, glide and level flight for his particular model and type of plane are to be devised) to the pitch attitude desired for the landing. He then moves the pitch turn knob so that the actual pitch of the plane matches the selected value. When the glide path needle of the cross pointer instrument moves down from the top stops, he turns the function selector switch to glide. When this has been done, the plane will follow the localizer beam as well as the glide path beam without any adjustment from the pilot.

At any point in this landing procedure the pilot may take over the controls if he so desires. He may land manually if he wants, or, unless a crosswind condition exists on the runway, he may let the system do all the work. Of course, he must still manually control prop pitch and mixture as well as put down the plane's flaps and wheels.



ALERTNESS INDICATOR ELECTRODES ARE PLUGGED INTO AMPLIFIER BOX

COLALUCA EXPLAINS RANGE ESTIMATOR USED AT NAS WILLOW GROVE

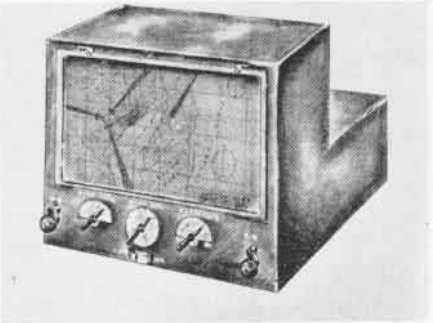
MUCH ATTENTION is now being focused on simplifying aircraft instrument panels, to enable pilots to perform their many functions in the limited time given at the new plane speeds. Having helped in the fight for cockpit standardization, Lt. Cdr. George W. Hoover, head of the flight section, and his staff are leading this new drive.

They are developing an automatic position plotter, which will enable the pilot to tell at a glance just where his plane is with respect to the earth's surface without having to go through the usual computations in connection with the Mk. 3 board.

As may be seen from the picture, the plotter is a boxlike affair, over which a sectional map is superimposed. The pilot, by using the E-W and N-S knobs, places the spot of light, contained within the device, behind the departure point of his flight. The compass heading, true air speed, wind direction and wind velocity are then automatically fed into the device as the plane is flown, and the point of light follows the course of plane. By looking at this point the pilot can immediately determine his position at any given time enroute.

This is the first version of the automatic position plotter. In the next version, the device is being incorporated in a standard horizontal Mk. 3 plotting board to determine the feasibility of automatic navigation for carrier type aircraft.

Another device, also in the research stage, provides the pilot with an instantaneous check on engine functioning without his having to examine the individual instruments in his plane. This device is the engine in-line indicator. In this, RPM, manifold pressure, oil pressure, fuel pressure, and oil and cylinder head temperature instruments are set in a panel in such a way that, under typical flight conditions all the instrument pointers are lined up in a straight line

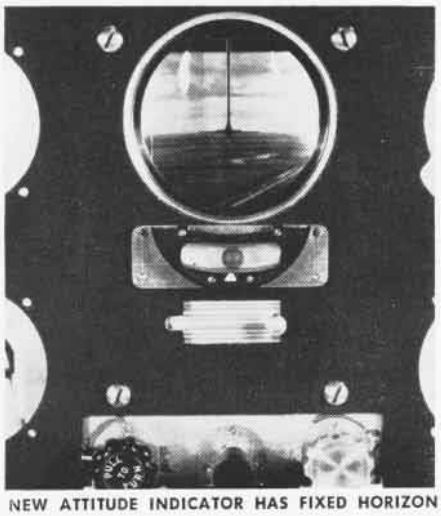


AUTOMATIC POSITION PLOTTER IS SHOWN ABOVE

across the panel to indicate proper functioning. Should trouble occur, the pilot can tell at a glance where the difficulty lies because the needle for that instrument is out of line. These instruments are connected with the throttle for automatic adjustment to different flying conditions.

It is planned that these instruments will be enclosed in small cylinders, which may be inserted in the panel like radio tubes, so that they easily may be removed for adjustment or maintenance.

The flight section is also working on a new type of attitude indicator to be used in connection with instrument flying. This device differs from the present attitude indicator in that the simulated plane, rather than the artificial horizon, moves in accordance with the movement of the aircraft itself. Thus the pilot can more readily tell whether his aircraft is in level flight or is climbing, diving, gliding or banking.



NEW ATTITUDE INDICATOR HAS FIXED HORIZON

The omni-directional recording accelerometer is another research tool being developed by the flight section to be used in connection with building safer aircraft. This small, lightweight device is designed for installation in existing service-type planes to record mechanical forces which such planes would encounter in case of a crash. The information obtained from these accelerometers will be used to determine where and how much structural failure occurs between the time the plane hits the impact surface and when it finally comes to a dead stop.

THE INDIVIDUAL'S reaction to the training equation is the particular concern of the human engineering section. Here the fundamental psychological problems of those who operate Navy machines are made the subject for intensive research. Typical of this section's work is the research now being performed on the alertness indicator. This is a device for signalling the pilot when he approaches the danger point of slowed reactions due to fatigue. This gadget measures the electrical current set up by human muscle action.

When a person's alertness decreases, there is a corresponding decrease in muscular action and in electrical current. Thus when a pilot's lack of alertness reaches a critical point, the device is set to send a signal (probably by means of a buzzer) to warn him of his condition. Specifically this device includes two electrodes placed on the subject's forehead, which pick up the current which is then amplified and measured. Eventually this type of device may be put in the pilot's helmet.

Gadget Research Marches Forward

THE TECHNICIANS at the Center, of course, still concentrate their major efforts on developing new training devices and teaching aids and on improving and modifying existing ones.

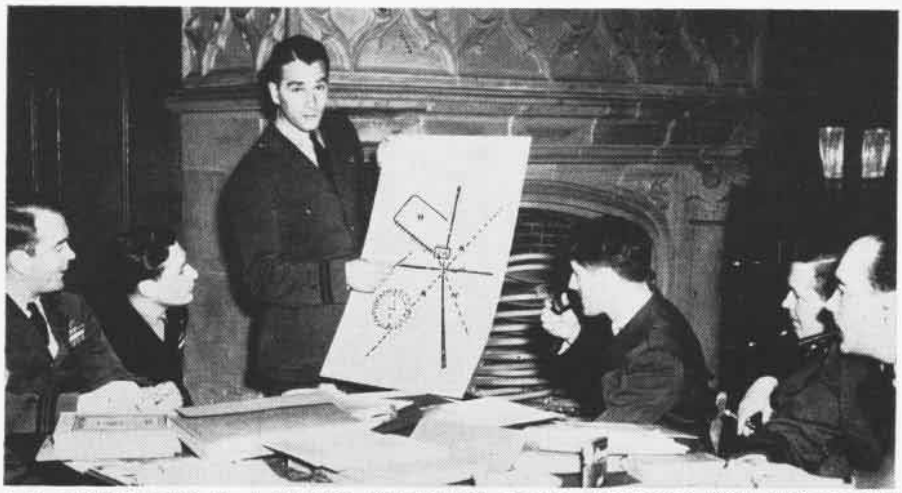
Operational flight trainers to match new planes are high up on the agenda, with the AD-1 trainer being the focus of current research. This trainer will work like the F8F trainer, except that it will have a fixed base cockpit and will include an electronic computer. Bomb dropping and rocket firing may be simulated so that the trainee may learn the handling characteristics of the AD-1 after such operations.

Research on a jet engine operator trainer is also underway. This will comprise a mock-up of a sectionalized axial flow jet, mounted on a panel and completely instrumented. Also included will be additional instruments, designed to show what happens to air as it goes through the engine—probably the flow of air will be indicated by a series of lights. This trainer will have a set of controls, which the trainee can operate to see what happens inside the engine as he varies the controls. There are also controls which enable the instructor to vary attitude and airspeed.

The F8F trainer, which is now widely used at training centers, is being modified into a night fighter trainer (F8F-2(N)) with the installation of the AN/APS-19 radar trainer and of a simulated radio altimeter. Students using this trainer will be able to "fly" a complete synthetic night fighter problem.

Electronic training devices naturally come in for much emphasis. The radar section which developed the elaborate ultra-sonic trainer, which simulates on a smaller scale the operation of standard airborne radar as applied to navigation

HOOVER SHOWS 'COPTER REQUIRES AGILE PILOT



S. D. OFFICERS HEAR LT. J. LEONARD EXPLAIN USE OF GCA PROCEDURES WITH LINK TRAINER

and bombing and enables the crew to "fly" missions and "bomb" targets, has recently developed a static device to teach personnel how weather looks on a plane's radar scope. This device consists of a shadow box, about 6½′ by 5′ by 2′ in size, which contains a static three-dimensional display. This display shows how different types of weather look on the scope and how they look to the naked eye.

Brief written information about each type is also included. The description for icing weather, for example, reads, "Radar pierces haze to show an icy area extending from 310° to 60°. By tilting the beam the top of the danger area may be found so that the plane can fly over it."

Now take a look at one of the prize projects being developed by the armament section, which is still definitely in the research stage. This is the wide-angle lens projection system, which is slated to be used in connection with operational training devices such as those for teaching gunnery. This system, when used with an ordinary 35 mm motion picture projector, will project an undistorted motion picture display on a concave surface screen.

When the trainee is placed in front of the center of the projection surface, what he sees on the screen resembles what he would see in real life with approximately the same perspective. The side-curved, dome-shaped screen, which must be used in connection with this system, also cuts out extraneous objects from the trainee's sight. Special film, taken with a camera equipped with a similar lens system, also must be used.

The picture shows the shape of the screen as well as some of the modifications of the projector. In the box on the side of the projector are a large spherical mirror and two plain mirrors which are an integral part of the system.

Two new target devices, recently developed by the armament section, are designed to give quick check-ups on hits. First is the remote scoring target. This is a 6′ by 24′ device, set in a wooden rack, which is connected by double conductor wires to a scoring mechanism located some 400 to 600 yards away. The scoring dial registers immediately any hits made and the results are then transmitted to the pilot over voice radio by the observer.

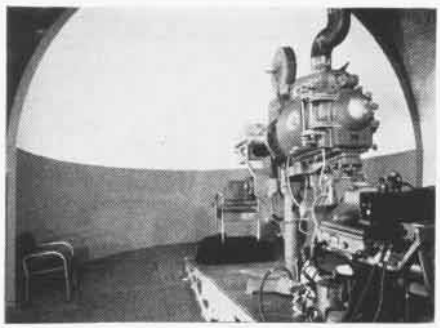
This system is now being adapted for towed aerial targets. Gliders or target sleeves will have incorporated into their structure the target material and the double conductors will be carried along (or will be built into) the towing cable for connection to the scoring mechanism in the tow plane. The observer in the tow plane will then transmit the results.

THESE, OF COURSE, are only a few of the many training devices which are being developed at the Center, but they indicate the practical type of equipment now being turned out.

Although some of the devices mentioned here are in production, most are still in the research and development stage. *No device, therefore, should be requested until it appears on the official list of devices available for distribution, which is regularly issued by the Center.*

Although certain sections have cognizance over the development of new devices, there is complete cooperation all along the line, not only among the technical sections but also among all divisions at the Center, so that the full impact of the Center's resources can effectively be brought to bear on a particular project. In addition, Special Devices works very closely with other establishments in the Navy which suggest ideas for devices, request that research be undertaken, cooperate in certain phases of the development and share in the evaluation programs.

A substantial portion of the work is conducted in cooperation with the Naval Research Laboratory, Naval Photo-



NEW PROJECTION SYSTEM AND CONCAVE SCREEN

graphic Center, National Advisory Committee for Aeronautics, Wright Field, Air Force and with universities such as Massachusetts Institute of Technology, Cornell, Columbia and Tufts. When naval facilities are not available, arrangements are often made on a contract basis with commercial firms to develop devices under technical guidance of the Navy. Once a device reaches the production stage, of course, contracts are let and devices are produced by industrial firms.

As was pointed out, a lot more goes on at the Center than the development and invention of new devices. Take a look at the activities of the maintenance division, for example. Personnel in this division arrange for the evaluation and testing of devices in the field to determine their best utilization. They conduct training courses at the Center and in the districts for special devices officers, organize TD courses for enlisted men and prepare training material.

Responsibility for installation and maintenance of training devices also devolves on maintenance division personnel. This means that they must instruct field personnel in maintenance as well as supply personnel to supervise more complicated servicing.

To describe their job of distributing and keeping count of all special devices would take a book. And the ramifications of the spare parts section are equally far flung. Suffice it to say that personnel in this section see that the parts get there when they are needed.

Space also prohibits more than a mention of the contract division, despite its importance to the whole establishment. This division is responsible for such matters as contract procurement of research development services, purchase of training gear, cost analysis, and legal considerations with respect to contracts.

Similarly the administrative divisions can only be briefly described as providing all services to insure a smoothly functioning organization.

Heading the Center, including the 480 naval officers and civilian specialists who comprise the staff, is Captain John Roger Ruhsenberger, USN, who has seen service aboard carriers, destroyers and battleships. During the war, after a tour of duty as communications officer on the staff of Commander Aircraft, Atlantic Fleet, aboard the *Ranger*, he served as CO of the naval air station at Dallas and later assumed command of the *Mission Bay*, which was assigned antisubmarine duty in the South Atlantic. He commanded Anti-Submarine Development Squadron One, based at Key West, before taking over at Special Devices.

Contrary to popular belief, the special devices field is a comparatively new one. In 1941 Special Devices was just a desk in the engineering department in BuAer. Wartime demands for more effective training equipment plus the inventive genius of the Navy pioneers in the field, sparked by Rear Admiral (then Captain) Luis de Florez, USNR, enlarged the scope of the work.

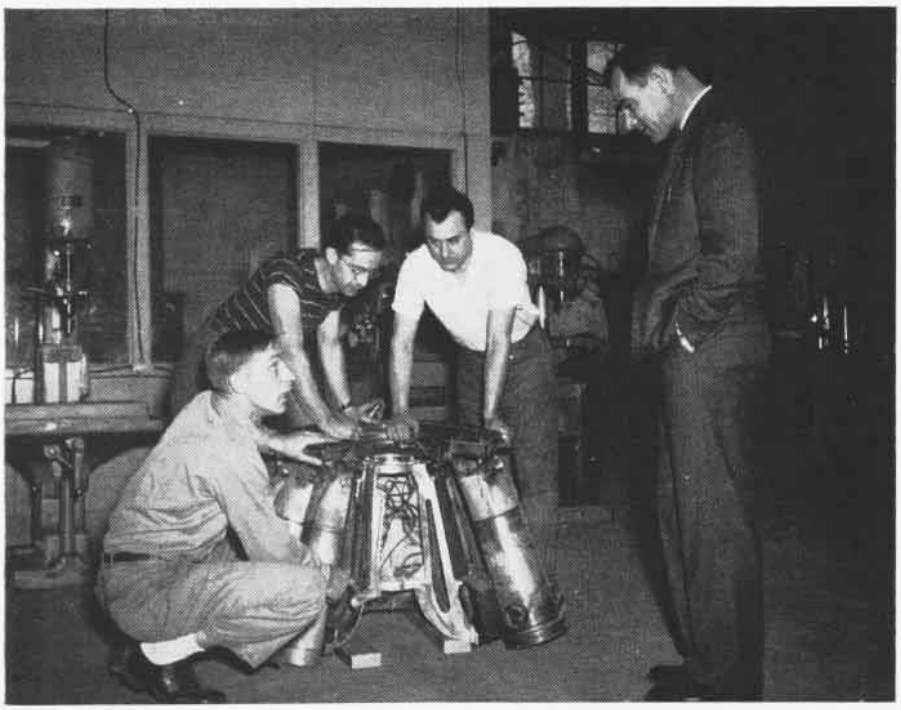
TYPICAL SPECIAL DEVICES USED IN THE FIELD

IN 1943 Special Devices became a separate division with Captain de Florez as its director. When Navy research was combined into the Office of Research and Inventions, it became a division in that organization with Captain D. L. Hibbard, USNR, as director and with Rear Admiral de Florez becoming deputy chief of ORI.

When, in 1946, the Daniel Guggenheim estate at Sands Point was made available on a rent free basis, the Special Devices Center was moved there from its wartime location in Washington, D. C.

Today's work is being performed primarily in two large buildings, formerly the manor house and the stable-garage. Both loom up in castle-like style, with massive stone walls, leaded windows and turrets. Once inside, however, the picture changes. Around a handsome fountain (not working at the present), in what must have been the reception room off the main entrance hall, for example, beaten up old Navy desks and file cabinets are set down in standard office fashion. Navy and civilian technicians rush up and down the stately staircases in the hurried tempo of modern business. Well-equipped machine, carpentry, model making, and electrical shops, as well as electronics, television and photographic reasearch laboratories occupy the stable-garage.

This unique set-up provides an entirely suitable background for both the bold, imaginative thinking of the technicians at the Center and for the practical special devices that are turned out.



DUNCAN, TANTANELLA, POMPEO AND SHOP SECTION HEAD TRINKO DISCUSS JET DEMONSTRATOR

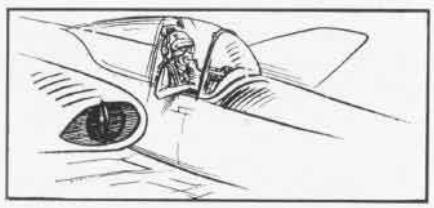
SONIC BARRIER CRASH

(This highly authentic account, whose author's name cannot be disclosed for obvious reasons, came to light via Wright Field, Republic Aircraft and Fighter Design branch of BUAER.)

WE WERE slipping smoothly through the air at 540 mph. I'd always liked the little XP-AZ5601-NG because of her simple controls and that Prandtl-Reynolds meter tucked away in the upper right corner of the panel. I checked over the gages. Water, fuel, rpm, Carnot efficiency, groundspeed, enthalpy. All ok.

Combustion efficiency normal at 23 percent. The good old turbojet was rumbling along as smoothly as always and Tony's teeth were barely clattering from the 17 buckets she'd thrown over Schenectady. Only a small stream of oil was leaking from the engine. This was the life.

I knew the engine in my ship was good for more speed than we'd ever tried. The weather was so fair, the sky so blue, the air so smooth, I couldn't resist letting her out a little. I inched the throttle forward a notch. The regulator only hunted a trifle and everything was steady after five minutes or so. 590 mph. I pushed again. 640 mph. Smooth. The tailpipe was hardly buckled at all—there were still several square inches open on one side.



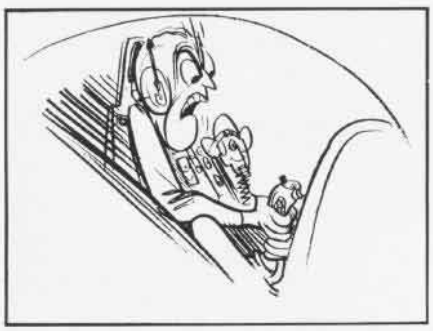
My fingers were itching on the throttle and I pushed it again. She worked up to 690 mph. passing through the shaft critical without breaking a single window in the plane. It was getting warm in the cockpit so I gave the vortex refrigerator a little more air. Mach .9! I'd never been that fast before. I could see a little shocklet outside the port window so I adjusted the wing shape and it disappeared.

TONY was dozing now and I missed the smoke from his pipe. I couldn't resist letting the plane out another notch. In 10 minutes flat we leveled off at Mach .95. Back in the combustion chambers the total pressure was falling like hell. This was the life! The Karman indicator showed red but I didn't care. Tony's candle was still burning. I knew gamma was down but I didn't give a damn.

I was dizzy with the thrill. Just a little more. I put my hand on the throttle but just at that moment Tony stretched and his knee struck my arm. The throttle jumped a full 10 degrees! Crash! The little plane shuddered from stem to stern and Tony and I were thrown in the panel by the terrific

deceleration. We seem to have struck solid brick wall! I could see the nose of the plane was crushed. I looked at the Mach meter and froze. 1.00! My God, I thought in a flash, we're on the peak! If I don't get her slowed down before she slips over, we'll be caught in the decreasing drag! I was too late. Mach 1.01! 1.02! 1.03! 1.04! 1.06! 1.13! 1.18! I was desperate but Tony knew what to do.

In a flash he threw the engine into reverse! Hot air rushed into the tailpipe, was compressed in the turbine, debusted in the chambers, expanded out the compressor. Kerosene began flowing into the tanks. The entropy meter swung full negative. Mach 1.20! 1.19! 1.18! We were saved. She crept back, she inched back, as Tony and I prayed the flow divider wouldn't stick. 1.10! 1.08! 1.05! crash!



WE HAD struck the other side of the wall! Trapped! Not enough negative thrust to break back through. As we cringed against the wall, the tail of the little plane crushed, Tony shouted, "Fire the JATO units!" But they were turned the wrong way! Tony thrust his arm out and swung them forward, the Mach lines streaming from his fingers. I fired them. The shock was stunning. We blacked out.

I came to as our gallant little plane, ragged from stem to stern, was passing through Mach zero. I pulled Tony out and we slumped on the ground. The ship decelerated off to the east. A few seconds later we heard the crash as she hit the other wall. They

never found a single screw. Tony took up basketweaving and I went to MIT.

Quick Work Quenches Fire

Men Win Praise for Fast Thinking

VP-HL-2, PACIFIC—During preparations for a typhoon fly-away, a gas truck auxiliary motor developed a leak and caught fire during fueling operations. In an instant the rear of the gas truck and hose section of the *Privateer* were a mass of flames. This was at 1410.

R. E. L. Kreber, AMC, and C. Mansfield, Jr., AD1, tried to extinguish the fire with CO_2 bottles. At 1412 the NAS AGANA crash truck had its first hose on the fire and at 1430 the fire was completely extinguished. The NAS and FASRON 118 fire crews prevented what might have been a serious accident.

G. H. Milne, ADC, of VP-HL-2 stayed on the wing of the plane and secured the gas caps. Machinist K. H. Hester of FASRON 118 drove the flaming gas truck away from the plane. Letters of commendation were awarded those who participated in extinguishing the fire. Aside from burning the paint from the nose section and damaging the bow turret plexiglas, there were no further casualties to the plane or injuries to personnel.

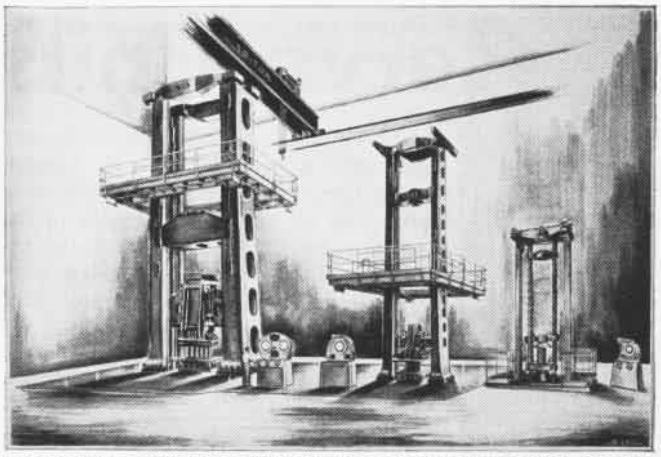
Navy Trains Pilots of USAF

Nine Men Pass Carrier Qualifications

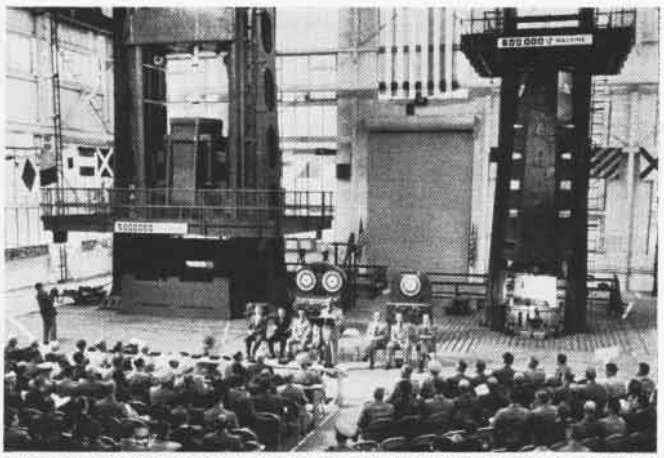
NAS PENSACOLA—Nine Air Force pilots took Navy carrier qualification tests in August aboard the CVL *Wright* off the Florida coast as part of training they are receiving to learn how naval aviation operates.

The men, all combat veterans, made six landings and take-offs. Later they were to participate in fall maneuvers with the Atlantic fleet. Navy training of Air Force men started last year when 10 Navy and Marine pilots flew in the joint paratrooper-tactical air command maneuvers in Georgia.

Before their carrier qualifications, the Air Force men made numerous simulated landings on the Pensacola airstrip. They were checked out in use of the Navy's navigational plotting board and learned communication procedures, special identification and use of homing devices carriers employ to bring their far-flung squadrons back to the deck.



LABORATORY WHEN COMPLETE WILL HOUSE SMALLER MACHINES AS WELL



5,000,000 POUND GIANT PERFORMED FOR VISITORS AT ITS DEDICATION

MAMMOTH TEST MACHINE

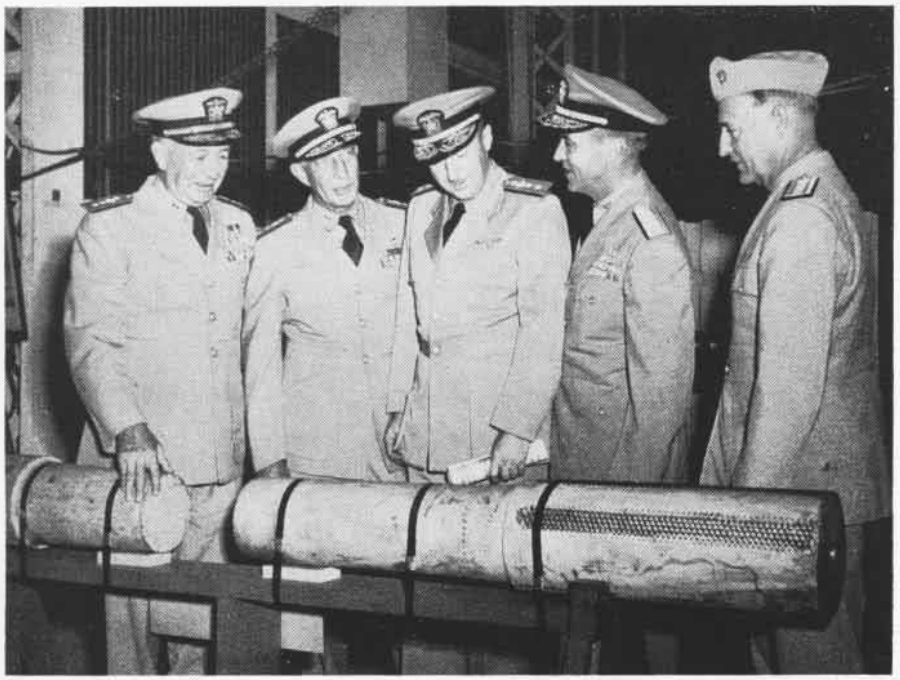
THE WORLD'S largest testing machine has gone to work at the Aeronautical Structures Laboratory of the Naval Air Experimental Station at NAMC PHILADELPHIA. With a Paul Bunyan capacity of 5,000,000 pounds, the machine, built by the Baldwin Locomotive Works under the sponsorship of BUAER, demonstrates its versatility by testing extremely light-weight structures of aluminum and magnesium. Load changes as low as four pounds can be indicated by the giant.

The machine will handle specimens up to 30 feet high, 10 feet wide between columns and 50 feet long. It can subject them to high stresses in tension, compression or flexure.

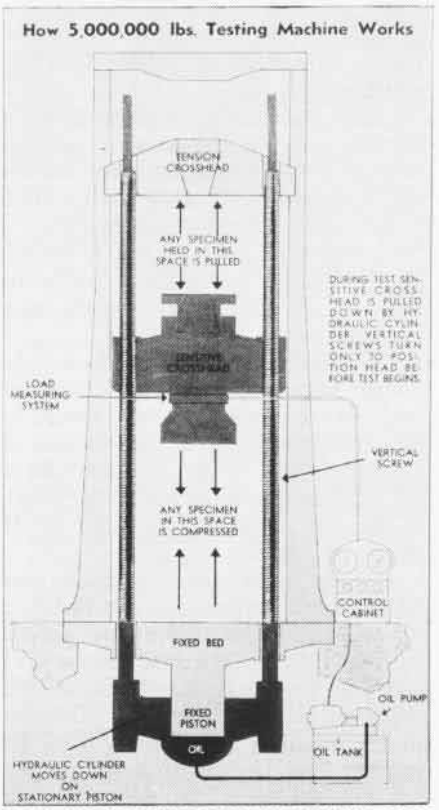
Use of this equipment is expected to help greatly in obtaining basic design data for the development of aircraft structures. Full-sized simulated parts such as cylindrical elements for fuselages and box beams, the carrying members of wings, can be modified with the aid of the testing machine to get the best shape, weight and strength for actual aircraft members. Compression and rigidity tests on full-sized airplane panels, under loads exceeding those of service, will give aircraft designers definite information on stiffness needs.

The tester comprises three distinct systems: the loading system, the weighing system, and the control system. In the loading system, the pump delivers oil under pressure to the hydraulic cylinder which is forced down, pulling with it the large screws and the sensitive crosshead. Since the tension crosshead at the top and the fixed bed at the botton remain stationary, the downward movement of the sensitive crosshead applies either compression or tension loads.

The most important unit of the weighing system is the Emery cell which transmits load pressures to the indicator. It is essentially a shallow cylinder having a loose-fitting piston and a metal diaphragm so arranged that the load on the specimen produces a pressure change on a thin film of liquid trapped between the piston and the bottom of the cylinder.

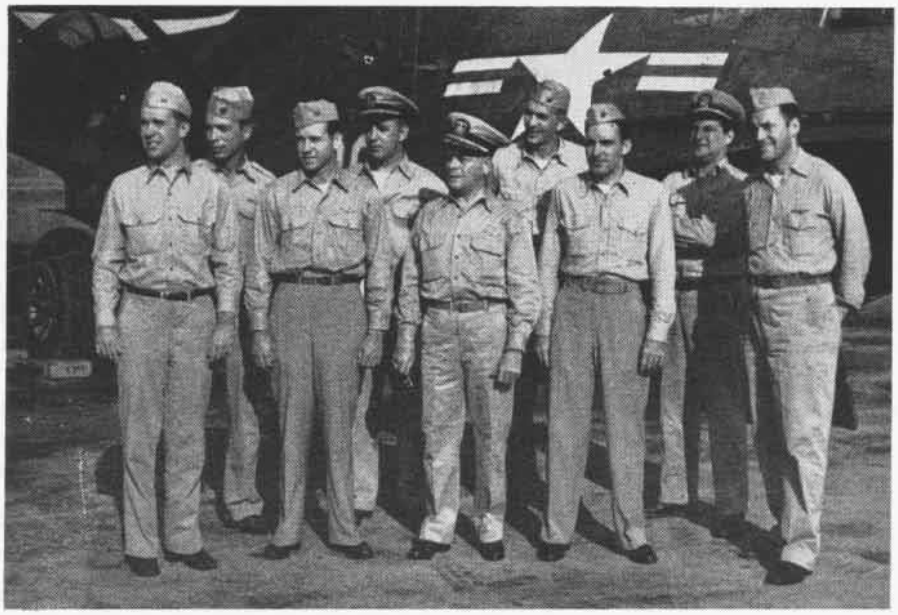


REAR ADMS. KAUFFMAN, PENNOYER, PRIDE, CRUSEN, NICHOLSON EXAMINE SPECIMEN AFTER TEST



DARK SHADING INDICATES THE MOVING PARTS

Upswing in Air Reserve Units



CDR. ADAMS (C) AND MEMBERS OF AVU(A) AT PITTSBURGH LINE UP DURING CRUISE AT W. G.

LINCOLN, Nebraska, is the location for the third naval air station to be established under the four station expansion program undertaken this year by the Naval Air Reserve. The first naval air station to be set up in the *Cornhusker* State, NAS LINCOLN brings the total of major units under the Naval Air Reserve Training Command to 26.

The Reserve manpower potential in this area was tested by the interest aroused in the Associated Volunteer Unit, supported by NAS OLATHE, which was activated earlier this year at Omaha. Not only did some 200 Reservists share in the activities of this AVU(A), but a further survey showed that more than 150 other air Reservists were interested in the program.

Lincoln was decided upon as the site of the station inasmuch as necessary facilities, not obtainable at Omaha, were available to the Navy there.

On the honor role of those who helped smooth the path for the establishment of NAS LINCOLN should be engraved the names of city officials of Lincoln as well as of such local Chamber of Commerce leaders as Mr. Rudy C. Mueller of Omaha and Mr. H. H. Hinds of Lincoln.

Already a staff of 12 officers and 130 enlisted stationkeepers is being set up to operate the station and provide training for the Organized Reserve CVE and fleet aircraft service squadrons that will be activated at Lincoln. About 40 planes are also being transferred for use by these Organized Reservists and for the Volunteer Air Reservists who will also train at this unit.

The station will be located at and will utilize the facilities of the municipal airport which is also used by commercial operators and the Air National Guard. It will occupy one twin hangar and two academic buildings.

Cdr. Leif S. Melsom USNR is slated to become commanding officer of NAS LINCOLN. He formerly served as exec at NARTU SEATTLE, at NAS GLENVIEW and at NAS SAN JUAN and also was CO at NAS CANTON. From 1945 to 1946 he was assigned to Alusna-Air in London.

While the naval air auxiliaries at Spokane, Birmingham and the Omaha-Lincoln area were blossoming into naval air stations, many volunteer aviation units, originally formed under the district commandants, were attaining associated status with various Reserve air stations.

Since 1 July, when the NANEWS published a complete list of Reserve units, 10 new associated volunteer units, six of which offer regular flight training, have been authorized. In addition three AVU's on that list have been given AVU(A) status and now provide flight training.

There has been an even greater upsurge on the volunteer aviation unit circuit in the districts. Top honors for having the greatest number of these VAU's goes to 6 ND, where 18 of these units are going concerns.

Runner-up on the VAU network is 11 ND, which now has 15 volunteer aviation units.

These units vary in size with VAU 13-1 at Corvallis, Oregon, which has some 282 members, and VAU 13-2 at Klamath Falls, Oregon, with 194 members, occupying top spots.

The following AVU(A)'s and AVU's, supported by the indicated Reserve stations, have recently been authorized:

AVU(A)
- Hagerstown, Md. (NARTU ANACOSTIA)—Cdr. Howard T. Byler, CO
- Pittsburgh, Pa. (NAS AKRON)—Cdr. Charles H. Adams, CO
- Milwaukee, Wis. (NAS GLENVIEW)—Lt. Cdr. Reginald J. Smitz, CO
- New Bedford, Mass. (NAS SQUANTUM)—Lt. Cdr. G. Robert Tinay, CO
- Charlotte, N. C. (NAS ATLANTA)—Lt. Cdr. William C. Scott
- Battle Creek, Mich. (NAS GROSSE ILE)—Lt. Cdr. R. J. O'Malley, CO
- Orlando, Fla. (NARTU JACKSONVILLE)—Cdr. Thomas O. Nills, CO
- Santa Barbara, Cal. (NAS LOS ALAMITES)—Cdr. George Sidenberg, CO
- Burlington, Ia. (NAS GLENVIEW)—Lt. Fred E. Anderson, CO

AVU(W)
- New York, N. Y. (NAS NEW YORK)—Lt. Cdr. Elizabeth M. McAghan, CO

AVU
- Duluth, Minn. (NAS MINNEAPOLIS)
- Jackson, Miss. (NAS NEW ORLEANS)
- Springfield, Ill. (NAS ST. LOUIS)

PRESENT AT THE COMMISSIONING OF THEIR AVU(A) AT NEW BEDFORD WERE THESE RESERVISTS

VF-173 Reservists Make the Grade

Naval Air Reservists, who on their return to active duty with the Fleet were assigned to VF-173 at NAS QUONSET POINT, have been doing a good job.

The squadron, which drew 17 of its 25 pilots from the Reserve, flew 516 hours with no aircraft accidents in the period from its commissioning on 11 August to 1 October. This record was chalked up despite the fact that only the commanding officer and one other pilot had previously been checked out in F8F's, although the majority had previous carrier experience in F4F, FM-2, F6F and F4U types aircraft.

Reserves Share in Search

On 15 September the Naval Air Reserve was alerted to participate in the greatest air search in recent Canadian history. This was the search for the Navy *Beechcraft*, carrying Captain B. S. Custer, Naval Air Attache to the Embassy at Ottawa, which disappeared in the wilds of Manitoba.

Ten PBY's, stationed at NAS GLENview, NAS GROSSE ILE, NAS MINNEAPOLIS and NAS OLATHE, were outfitted with men and equipment and were ordered to stand by until liaison could be established with the RCAF. With Capt. Cameron Briggs, CO of NAS MINNEAPOLIS acting as co-ordinator, it was decided that 3 PBY's (which the Canadians call "Cansos") could be added to the searching forces of the RCAF, U. S. Coast Guard, and U. S. Air Forces without overloading logisitics in the remote area of The Pas.

Accordingly these planes were dispatched. Personnel from Glenview, Grosse Ile, Minneapolis and Olathe participated in the operation. The Minneapolis crew logged 60 hours in nine days, flying every day except two when the plane was in check. They turned up a hot lead on 18 September when a small isolated community, thinking they had some vital information about the lost plane, signalled with mirrors and then blocked out messages on the ground with cordwood. But it fizzled out.

On 25 September, of course, the missing aircraft was located at a point 250 miles northwest of The Pas and all personnel were found uninjured.

Meanwhile the clock was almost stopped on all operations at NAS MINNEAPOLIS when the XM-1, the largest Navy blimp, arrived from Lakehurst enroute to northern Manitoba. The blimp was brought down to a portable mast, which had been flown from Lakehurst by an advance crew in an R4D and had been erected by Regulars and Reserves working all through the night. The blimp was expeditiously handled by the green NAS crew, supervised by the LTA crew from Lakehurst. Since the blimp arrived in Winnipeg simultaneously with the finding of the survivors, it returned to Minneapolis after being refueled and thence departed for Lakehurst.

In their roles as searchers and as blimp substitute attendants, the Naval Air Reservists throughout *Operations Attaché* demonstrated that they were right on the job and ready for any emergency.

OFFICERS FROM NAS DALLAS COME ASHORE AFTER FIRST POSTWAR RESERVE CARRIER OPERATIONS

League Leaders

Marine Air Reservists of VMF-233 at NARTU NORFOLK probably hold the group long-distance record, since some 21 members travel some 340 miles each month from the Cherry Point area to Norfolk and back to attend weekend drills.

Most of these men are employed at NAS CHERRY POINT in the O&R department. These include: 1st Lt. M. P. Holowiti; 1st Lt. R. G. Chugg; CWO J. J. Dianish; M/Sgt. E. D. McClellan; M/Sgt. E. F. Provo; Sgt. J. C. Teel; Sgt. J. G. Morton; Sgt. J. E. Schmalfeld; Cpl. T. C. Posey; Cpl. E. L. Poettgen; and Pvt. J. H. Poteat.

In addition, Capt. A. R. Bell, Capt. W. G. Van Buskirk and 1st Lt. Hitson of New Bern and Pfc E. P. Lawrence of Morehead City also make the monthly trip to Norfolk.

J. L. Tompkins TD3 of NAS MINNEAPOLIS has built an automatic direction finder training device to provide pilots with a better concept of radio compass technique. The unit comprises a model airplane with a compass dial and pointer. The pendulum-actuated magnetic compass headings are viewed through a window in the radio receiver dial. The R. C. needle has an arm attached to a weighted string that passes through the center of a compass rose drawn on a sheet of metal measuring 36 by 36 inches. The plane is movable and the needle always points to the home station.

Station Round-Up

● NAS AKRON—Pilots are now undertaking the gunnery phases of the flight training program at NAS GROSSE ILE. With the very helpful cooperation of Grosse Ile, Akron pilots get a very concentrated two to three day training, with necessary personnel and equipment being flown up from Akron.

The Akron Air Scouts, sponsored by the Goodyear Tire and Rubber Company, plan to utilize the aviation technical training department's instructors and training aids one night a week.

● NARTU ANACOSTIA—In honor of National Youth Month, this unit was host on 26 September to youngsters in the Washington area and to distinguished representatives of organizations interested in young people. The *Blue Angels* and Marion Carl's jet team outdid themselves for the occasion and the Reserve pilots put everything they possessed into balancing the show for everyone's enjoyment. Some 15,000 persons crowded on the station to watch the aerial demonstration, the static display of planes and the presentation of a Piper *Cub*, given by W. T. Piper, to the Wing Division of the Girl Scouts. In addition some 225,000 spectators, assembled to watch the President's Cup Speedboat Regatta, had front row seats so to speak at the air show.

● NARTU NORFOLK — For the second straight month, a record number of hours were piled up by NARTU pilots when they logged 4464.9 hours of flight time during September. This mark was set although planes were grounded due to bad weather for 4½ days during the cruise period and 2½ days during weekend training periods. Another all-time record was established during the month by VF-62 pilots. Using the same rocket range as the Atlantic Fleet units, they flew eight F6F-5's, carrying 36 rockets and scored 18 bulls-eyes to set the all time high range record for both Regular and Reserve Units. The previous mark was set by a Fleet AD-1 squadron which hit 17 bulls-eyes with 64 rockets fired. These results were confirmed by the range O-in-C.

LIFE AT OCEANA

• Editor's Note: The following opus on that garden spot of America—Oceana, Va.—was written by Ens. W. M. Simpich of the USS *Midway*. The reader is invited to take it with a grain of salt.

COMBAT-weary troops are returned to rehabilitation centers, old race horses are turned to pasture, elderly policemen too mellowed with age to be useful are retired to old men's homes, and carrier air groups back from sea go to Oceana.

This air base, for the enlightenment of the unread, the untraveled, and those fortunate enough not to have known one of Riera's "Boy Scouts of the Air," is a lush hunk of Eden in the fetid morass which is Virginia. Capt. John Hampton, the British mariner for whom the nearby Roads are named, was the first white man to visit the area and named it Oceana, possibly because it was on the ocean.

This, however, was mere guesswork, but we do know that Hampton was wild about the place, insisted that all his friends be wild about it, and even demanded that, whenever they were there, they act that way. This puzzling attitude developed into sort of a tradition with Oceana folk and, if anything, has become more intense with the years.

Although Capt. Hampton himself would recognize the hilarity and Rabelaisian humor which prevades Oceana, he would be hard put to find his way among the expansive, expensive architecture which rises now as a symbol of the Navy's gratitude to its overworked birdmen.

The most impressive structure is the Ensign *Tailhook* McGinnis Memorial, erected in loving memory to *Tailhook* by members of his old squadron. *Tailhook* was the first naval aviator to die from bed sores. In remembrance of him a giant Navy-type bunk, 53' high and hewn from black Belgian marble, stands on a gentle rise above Oceana known as *Tailhook Hill*.

The bed is kept lit by night by a team of fledgling pilots who bathe the huge memorial in the glow from a hundred Very pistols. As with the Vestal Virgins who tended the eternal fires of Rome, laxity is rewarded with severe punishments. One ensign, haphazard in handling his flares, was sentenced to learn by heart the meanings of such complicated Navy phraseology as 'port and starboard' and 'fore and aft'.

NIGHT life at this roost for the idle rich is centered in Zoomie Hall, the largest night club on earth. Here, when

an airdale asks for a drink, he says, "Scotch and soda, with a *Corsair* on the side". In a matter of seconds, a waiter brings not only the drink but the requested airplane which he taxis up the huge floor to the waiting customer. He, in turn, mans the craft, has the wheels chocked, revs up the engine, and downs his drink while chalking up flight time.

Aviation Teacher Workshop

Two-Weeks Training For Teachers

NAS SAN DIEGO—As part of the program for furthering aviation instruction in the public schools of California, a group of aviation teachers from high schools and colleges throughout the state spent two weeks in training at NAS SAN DIEGO. They held their workshop in one of the station buildings and made conducted tours of the various aviation facilities, with special emphasis on the training program for aviators.

Among the Navy and civilian speakers who came to the station to deliver lectures to the group were Cdr. R. S. Mankelkorn from White Sands, New Mexico, who spoke of the atomic pile, and Lt. W. L. Miller from Pt. Mugu, Calif., who talked on the research problems connected with guided missiles. Cdr. J. S. Barleon, training officer for Commander Fleet Air West Coast, lectured on the operational training of pilots; and Lt. Cdr. J. F. Daniels of NAS SAN DIEGO outlined the training program of the assembly and repair department. Dr. Ed Lee of U.C.L.A. and Marshall Beeman and W. O. Johnson of the Civil Aeronautics Administration were among the civilian lecturers.

NAVY AIDED IN AVIATION TEACHERS WORKSHOP

The group of men and women educators who participated in the program had an opportunity to meet various naval aviators and obtain their reactions to the aviation courses which they had taken in the Navy. A great part of the day was spent in workshops conducted by qualified instructors from the State Department of Education. Two college credits were earned by each member of the group.

Navy Planes Fly to Berlin

Two Navy squadrons of R5D transports, which formerly flew western Pacific hops under MATS, have gone to work to supply Berlin with food and fuel this winter. They are VR-6 under Cdr. C. C. Howerton and VR-8 under Cdr. James O. Vosseller, both part of Rear Admiral W. G. Tomlinson's Pacific division, MATS.

These are the first Navy planes to fly into Berlin, although the Navy has been backstopping the airlift by relieving Air Force crews on transcontinental runs and in the Pacific so they could be switched to Europe and has flown the North Atlantic. VR-6 had been flying from Guam to China, Manila, Japan and Saipan. VR-8's routes were from Guam to Fairfield, Calif.

After being drawn off the Pacific routes, the cargo planes were winterized at Moffett Field before going to Germany. Marine transport planes from VMR-352 and Fleet Logistic Support Wing squadrons were assigned to fill the blanks in the Pacific flight schedules.

Prior to the switch of the two Navy squadrons to the Berlin run, Navy pilots and Air Force navigators were flying the Pacific in MATS planes.

October and November flight schedules were flown by mixed crews to alleviate the present shortage of Navy pilots since the plan releases Navy pilot-navigators to fly as copilots on Trans-Pac operations.

Navy flights have replaced Air Force planes as the latter service moved its planes to the Berlin operation. The big *Mars* flying boats were added to the Pacific division operation to replace the C-97 *Stratofreighters* which formerly flew the route from Honolulu to the mainland. Four JRM-1's and the JRM-2 *Caroline Mars* were allocated to MATS by VR-2 during the emergency.

Each of the JRM-1's can carry 3,000 pounds more than a C-97 and the *Caroline Mars* can carry more than double the payload with a lift of 38,000 lbs. The latter makes one weekly round trip flight from Alameda, Cal. to Hawaii.

DID YOU KNOW?

NAVY UNVEILS F7U JET

THE NEWEST—and strangest-looking —of the Navy's stable of carrier jet fighters has been unveiled to the public—the Chance Vought XF7U-1. The twin-jet, tailless, swept-wing fighter successfully completed its initial flight tests at Patuxent River, Maryland.

Nineteen of the fighters are scheduled for purchase under the 1948-9 budget. The F7U is in reality a flying wing with two vertical stabilizers and rudders located at the trailing edges of its wings. Longitudinal and lateral control are obtained by a pair of "ailavators"—combined ailerons and elevators.

Its swept-back wings and twin Westinghouse jet engines are expected to give it speeds well above 600 miles an hour and a high rate of climb. A unique feature of the plane is the absence of landing flaps. To achieve relatively low carrier landing speeds, the plane has leading edge slats. The extension of these during a landing approach increases the wing lift and delays the stalling point. For aerial maneuvers, as well as landing operations, speed brakes are located at the trailing edge of the wings to cut speed.

To give the jet engines added thrust in emergencies, afterburners are included. Air intakes are at the wing roots. To overcome tremendous forces brought on by high speed flight, all controls are provided with hydraulic boost. The designers had to incorporate an artificial "feel" for the pilot which simulates the control forces encountered in conventional aircraft.

Good forward visibility is insured by placement of the cockpit well forward in the nose of the plane. It is pressurized for high altitude work. Another feature of the plane is the use of magnesium in certain areas instead of the usual aluminum alloy covering, resulting in a decrease in weight.

The aircraft has an ejection seat for rescuing the pilot in emergencies. Since the plane has no rudder directly behind the pilot seat, the ejection charge can be less than is used to "kick" a pilot and his seat above the high tail surface of some planes.

The XF7U-1 is a conventional carrier-based fighter in every other respect. It has a tail hook for arrested landing, tricycle landing gear and is equipped with folding wings. The production version will be made at the Chance Vought Dallas plant, recently moved to Texas from Connecticut.

ARTIST'S DRAWING OF NEW CONVAIR SEAPLANE

New Seaplane To Be Speedy

XP5Y-1 Tested Via Radio Model

The Navy has released details and an artist's drawing of its newest seaplane, the XP5Y-1, two of which are being built by Consolidated Vultee at San Diego and are expected to fly next spring.

The plane's quick take-off and high speed are due to its four propeller turbine Allison engines and its advanced design, featuring a high length-beam ratio. The engines are expected to develop at take-off more horsepower per pound of airplane than some modern fighters. The XP5Y-1 is designed for long range day and night search of sea areas, rescue operations, and antisubmarine patrol.

Much of the hydrodynamic testing of the high-wing, single-tail flying boat was done with a radio-controlled flying model, similar to the full scale aircraft. A non-powered catapult model, dynamically and geometrically similar was used to analyze landing characteristics. (NANEWS, November, pg. 21.)

Pilots Pick Out A Pretty Girl

'Miss Bearcat' Wins Norfolk Honors

A jury of five bachelor pilots with VF-63 recently picked Miss Patricia Cotter, brunette sophomore from Louisiana State College, as "Miss Bearcat of 1948" in conjunction with the Chesterfield Supper Club radio program.

Selection was made at NAS NORFOLK, where Lt. Cdr. Malcolm W. Cagle, skipper of the F8F squadron,

'MISS BEARCAT' AND BOYS WHO PICKED HER

gave Miss Cotter a model *Bearcat* and an armful of American beauty roses. Members of the *Coral Sea* squadron who picked Miss Cotter were Lts. (jg) Jack McQuaig, Edward Uhler and Hugh O'Hara and Ens. Roger Babcock and William C. Torkington.

As Miss Cotter received the title, 12 *Bearcats* flew in close formation across the Virginia Beach Surf Club in salute at 400 mph. The following morning she made an inspection of the squadron, and in the evening a military ball was held in her honor at the Officer's club. Miss Cotter also won the title of Miss American Co-Ed in connection with the radio program, winning out of a field of 12 co-eds from various colleges.

Chairborne Troops Must Fly

FLSW Ruling Requires 30 Hours

Navy pilots with desk jobs, who have trouble getting in their four hours a month of flight time, will be interested in a new ruling by Fleet Logistic Support Wings requiring all their naval aviators to get in two flying missions a month and 30 hours of flight time minimum.

The new directive is aimed at men with administrative jobs to bring them up to a maximum level of proficiency and experience. A special plane commander school is being conducted by VR-44 at Moffett Field. Instead of the usual class of trainees from various squadrons, the September course included all ComFltLogSupWings staff and VR-44 pilots who had not been designated R5D plane commanders.

Most of the students were working for a higher copilot classification, but three were enrolled as plane commander students. All were required to fulfill the same flight and ground school courses as any other group under instruction, and also their regular jobs.

Profit in Garbage Disposal

NAS Alameda Saving Tax Money

NAS ALAMEDA—Housewives might well take a tip from the "waste not, want not" policy adopted by NAS ALAMEDA which throws away not one ounce of garbage or paper, selling it instead for a tidy profit of $10,000 a year.

Under direction of Gerald T. Grace, civilian supervisor of the station's vast salvage and disposal division, all garbage and paper is segregated, to be rendered or processed for further use by the American public.

This is but one branch of the million dollar disposal activity, which includes salvaging of aircraft, precious metals, electronics and radar equipment.

The fat and trimmings of meat are rendered into oil for soaps, plastics, and other uses. Bones are ground for fertilizer meal and gelatine. The remaining "wet garbage" is sold for hog food.

Cardboard boxes are compressed into 150-pound bails, to be processed into a liquid mass from which new cardboard boxes are made. Wooden boxes are sold for fire wood. Obsolete and discarded paper work is briskly shredded into fine strips by a machine and bailed for use in packing and storage.

Selling the cardboard nets a profit of $3,720 a year. Grease and bones sell for $1,572 a year. Wet garbage, which ordinarily would cost the station $3,900 a year for collection by city scavengers —100 pails emptied each day for six days a week at 12½ cents a pail—is given to the garbagemen in exchange for services. They, in turn, sell it to hog ranches.

Famed Explorer Pays Visit

Nome Photo Squadron Sees Wilkins

VP-61, ALASKA—Famed British Arctic and Antarctic explorer, Sir Hubert Wilkins, recently was the guest of this squadron at Nome, giving leaders many tips on survival and frigid operations.

He is presently working with the Navy and other U. S. forces on a project known as "environmental protection" in the Arctic-regions. Lt. F. F. Favreau, officer in charge of the squadron's Nome detachment, showed Sir Wilkins the extent and type of work being done in northern Alaska this summer. He proved himself thoroughly versed in the peculiarities of this frozen land, having lived more than a dozen years in the area.

SIR HUBERT POSES WITH VP-61 MEN IN ALASKA

He has been an aviator since 1911 and his explorations date back to Stefansson's Arctic Expedition of 1913-17. In the accompanying photograph with him are: back row, Lt. Robert J. Wooten, Favreau, Sir Wilkins, Dr. E. Willard Miller, his assistant; and Lt. (jg) L. A. Grissom. Front row: Howard G. Hunt, Norman L. Moore, William H. Whitehorn, Cornelius Hagerty, Carl L. Hawkins and Carlos F. Kucera.

Use of JATO rockets on the R60-1 Constitution cut its take-off run 24 percent, Lockheed engineers reported following tests of their use. Six rockets were installed, three inside compartments in each wing behind the inboard engines and above the flaps. Tests were made at various weights up to the plane's 184,000 pound maximum loading. Bottles were fired as soon as the Constitution's wheels left ground.

What's *this on the CVE Sicily's flight deck? Completely weatherproofed, this F-80 Air Force fighter, with many more of its mates, was ferried from the Canal Zone to Europe in a recent mass transfer.*

Hot Meals Out in Pacific

Box Lunch Served on MATS Planes

MATS, PACIFIC—Frozen, pre-cooked flight meals on Pacific division planes are a thing of the past, with box lunches being substituted as more economical and easier to fix.

Frozen meals require costly aircraft galley equipment, oven failure means no meal, freezing facilities ashore are required and excessive loss of silverware and shipping chests was reported.

Arguments for a box lunch are that it can be fixed at the last minute before plane departure; it can be eaten at once or nibbled at will; and it can be prepared at any regular or emergency station. A saving in weight by removing the heating ovens also will result in carrying an extra passenger.

Whiting Field a Busy Place

Primary Training, Reserves Active

NAS WHITING FIELD—Since 1 July, activity at this station has resembled that of a beehive. The two Primary Training units now operating at Whiting field involve more flight instructors, students, and supporting personnel than the station has had for a long time. With the hoped for provisions of appropriate, well constructed buildings, including quarters and recreation facilities, this station can look forward to an enviable reputation as a unique naval air station "in the country."

During June Whiting field provided support for the Dallas, Texas, and Olathe, Kansas, Reserve groups. Fifty-three CV type aircraft and five multi-engine aircraft were flown by these groups. A Naval Reserve unit support bill was promulgated by this station, based on the experience gained from support of the Dallas and Olathe groups; it provides for prompt and continuing support in such matters as maintenance, messing and billeting, transportation, gunnery and recreation.

Sightseers *at the Chicago waterfront go aboard the newest of the Mars seaplanes, the JRM-2, which set a long distance record for seaplanes by flying from Hawaii to Chicago with a heavy load. Flight was a feature of Cook County Fair at Chicago.*

Ground School Classes Help

Personnel Enrolled In Flight Training

Several petty officers in VP-MS-3 have taken advantage of civilian pilot training through the G. I. Bill of Rights and have obtained private pilots' licenses. As a result, many of the people in the squadron have evinced a desire to know more about piloting and aviation.

The Training Department has introduced a basic aerology class plus a navigation course for those interested. Both courses are conducted after working hours and a record attendance is always reported.

Trujillo Visits On Coral Sea

Carrier Visits Caribbean on Cruise

USS CORAL SEA—This CVB had the honor of being the first aircraft carrier to visit the Dominican Republic when it dropped hook at Cuidad Trujillo, the capital city, fired a 21-gun salute and had President Trujillo aboard for 45 minutes as an interested sightseer.

The visit was made on 18 September through the 21st, with all hands being warmly received by the American ambassador, Ralph Ackerman, and officials of the Dominican government. Trujillo was welcomed aboard by Capt. A. B. Vosseller while the crew manned the rail and the salute was fired.

The visit was part of a month's operations out of Norfolk during which 650 Naval Reserve officers and men from the 5th, 6th, 9th naval districts and Potomac River Naval Command were aboard for active duty cruises. Squadrons VF-61, 62, 63 and VA-64 were also embarked to qualify in F8F-2's or make refresher landings in AD-1's.

GCA BOX SCORE

GCA Landings Sept.	9,647
Actual Instrument	199
GCA Total Landings	151,700
Actual Instrument	6,576

Skeet Shoot Honors Leader

Mullinix Trophy Vied for at Station

NAS SAN DIEGO—A thousand skeet-shooting fans thronged the station's trap ranges to see the first annual Mullinix matches, commemorating the late Admiral Henry M. Mullinix who commanded carrier air support groups in the Gilberts campaign.

Hollywood movie stars and skeet artists from all over California gathered

ADM. DURGIN GETS CUP FROM ED DREW, DONOR

to participate. The perpetual memorial trophy was presented to Rear Adm. Calvin T. Durgin and placed in the station's trophy case. Names of Charles Rapp and Maynard Henry were inscribed as the top winners in skeet and trap events, each with a perfect score.

Members of the NAS gun club carried off a good share of individual honors. Hughes, AOC, took first in Class B skeet; Lt. Cdr. H. A. Robinson finished third in the event, Cdr. R. White took top honors in Class skeet and Lt. (jg) I. C. Logan was runner-up. The NAS-NAB ordnance officer was awarded a booby prize in the form of a "flaming red hat" for getting a score near the winning bracket.

Navy Aids In Circus Search

Caribbean Scoured For Survivors

FAIRWING-3, PANAMA—Search planes of this wing played a prominent part in search for survivors of the ill-fated motorship *Euzkera*, carrying 57 persons and all animals of the Razore circus, which sank in the Caribbean on 1 Sept.

Five days after the ship was overdue, the armed forces were alerted to start the search. Twelve survivors were found a day later by the Norwegian motorship El Caribe. For five more days, planes and crews of VP-3, VP-40 and VP-44 spent many hours in the air searching the area for more survivors. Roughly 133,000 square miles were covered in 225 hours flying time by Navy and Air Force planes before the search was abandoned on 11 September. Three *Mariners* from VP-40 out of Guantanamo also participated in the search.

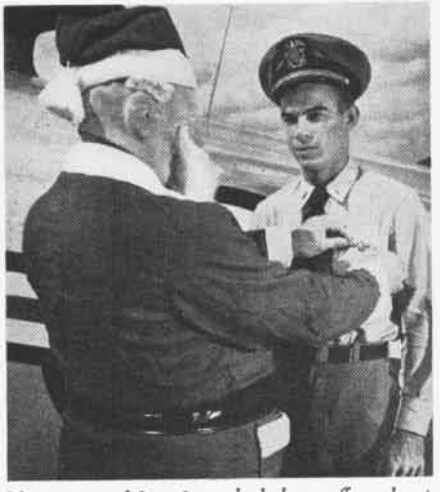
Navy pilots aiding in the search were Gist, Ullrich, Prestwich, Beatson, McQuiston, McLinn, Tate, Sparks, Gless, Stockton, Newbill, Chapman, Rooke, Coupe, and Tolerton.

GCA 'Chatter' Standardized

Circular Letter Sets Out Phraseology

The Navy, Air Force and CAA have adopted a standard phraseology for use by GCA operators all over the world, so that service or civilian airline pilots will hear the same language when being "brought in."

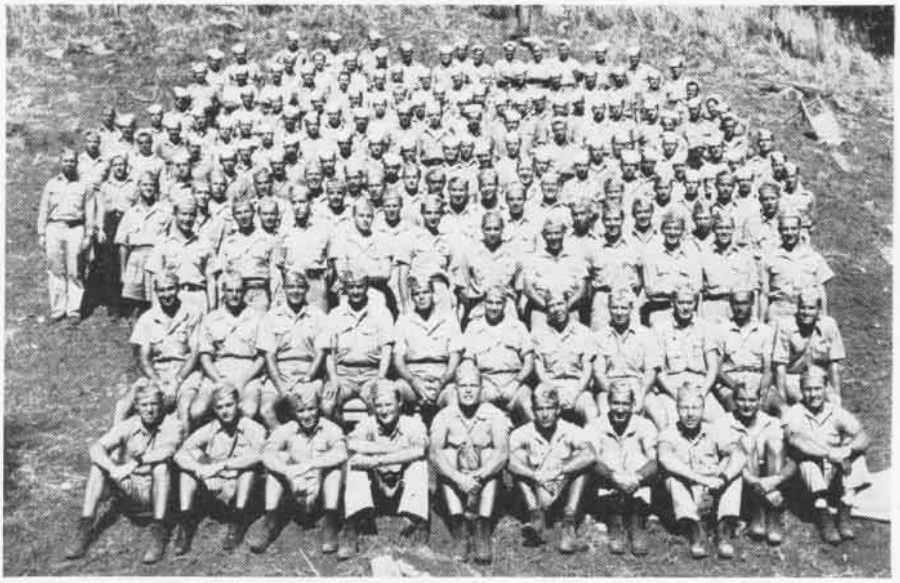
Navy has 35 GCA sets in operations in far corners of the globe, from Argentia to Alaska and from the Caribbean to China. The standard basic telephone phraseology is outlined in ACL 62-48 issued recently. The "code" of phrases and words to be used by all operators was adopted after numerous conferences.



Many a shivering *lad has offered up a silent prayer the night before a check flight for a Santa Claus. And a few have been answered. However, this is the first time that Santa has ever been caught in the act. Pensacola photographers not only got Saint Nick delivering the big gold wings, but also caught him briefing some boys on special mission 1225481, "down the smokestack."*

★ THIS IS the twelfth of a series of short sketches of squadrons in World War II. It is based on reports filed with Aviation History and Research in DCNO(Air).

BLACK CATS VPB 52

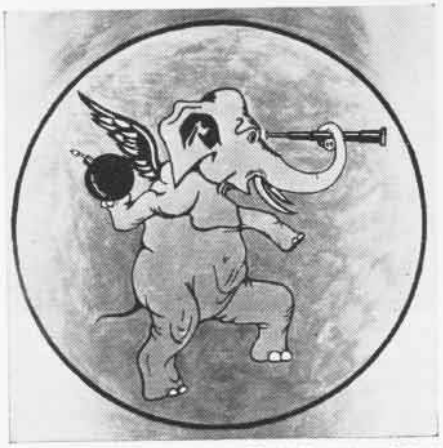


BLACK CATTERS AND CREWS DURING PERIOD WHICH WON VPB-52 PRESIDENTIAL UNIT CITATION

IN JUNE 1943 there arrived at NAS KANEOHE one of the oldest squadrons in the Fleet, VPB-52 commanded by Cdr. Frank M. Nichols. Its pilots were flying *Catalinas* which were old when the war began. But though the planes were old, clumsy and slow, the pilots were not. It took more than ordinary seamanship to man these flying tubs. It required skill and faith of a high order to make the *Catalinas* achieve feats which won for VPB-52 a Presidential Unit Citation.

Stationed at the Canal Zone and other Caribbean bases between 1940 and 1943, VPB-52 was first geared to battle and then went to war, patrolling the seas against enemy forces that might try to attack the Panama Canal.

When the squadron completed its Atlantic operations in the spring of 1943, its log was filled with the names of bases from which this country sent out its challenge to the enemy U-boats —Bermuda, Guantanamo Bay, San Juan and Natal. VPB-52 was a seasoned squadron ready to strike unremittingly the enemy in the southwest Pacific.



LUMBERING FIGHTER WAS SQUADRON'S INSIGNE

Proceeding from Kanehoe in the summer of 1943, VPB-52 went to Perth where the squadron spent nine weeks. Five planes were kept at two bases to the north, so from Exmouth Gulf, Geraldton and Perth, daylight searches were made over the Indian Ocean with an occasional day or night convoy mission undertaken.

From 23 November to 31 December 1943, VPB-52, commanded by Lt. Cdr. Harold A. Sommer, operated from a base at Namoai Bay, New Guinea. It was in this period that their *Black Cat* operations, executed with force and daring, cost the enemy surface forces tons of shipping. Masthead bombing attacks made in the dead of night by VPB-52 pilots in their pitch black *Catalinas* were a vital factor in warfare against the Japanese in the Bismarck Sea area, then a focal point of the Pacific offensive.

Pioneers in low altitude glide bombing attacks at night, VPB-52 pilots had developed a technique that was certain, sure—and deadly. The pilot would approach his prey at about 1,000 feet, then glide or dive to masthead level and release the bombs in train. Usually the *Catalina* was loaded with two 500-lb. and two 1,000-lb. general purpose bombs, fused for a 4½-second delay. No bombsight was used, the pilot simply sighting by seaman's eye and releasing the bombs from the cockpit.

On the night of 24 November, Lt. William J. Lahodney made an attack on a cruiser escorted by three destroyers 70 miles north of Rabaul. Since a previous attack had alerted the force, Lt. Lahodney was challenged by intense AA fire from all the ships. Undeterred by this salute, Farragut's airborne successor glided to 150 feet before releasing his bombs, two of which hit the cruiser. Although his plane was badly shot up, Lahodney made it safely back to base, winning for valor the Navy Cross. The *Black Cat* was really tough! As one pilot put it, "She can absorb lead like a migrating goose and wing on through flak."

Another accomplishment must be chalked up to Lahodney's credit. Just prior to these operations, he was instrumental in having four forward firing .50 cal. guns installed in the bow of his plane, an installation which was later used in other squadrons. Thus armed, *Cats* effectively strafed surface craft.

ON THE night of 30 November, Lt. William J. Pattison, a veteran of Atlantic patrols in the Bermuda area, spotted a large convoy just south of Kavieng apparently headed for Rabaul. Despite AA fire, Pattison decided to direct his aim at the largest ship, the one at the head of the column. It was a 15,000-ton tanker that succumbed to the two bombs Pattison directed at it. The ship was destroyed by the flames that immediately enveloped it. For this aggressive and effective attack, Lt. Pattison received the Silver Star.

On the night of 13 December, Lt. (jg) Rudolph Lloyd, found a light cruiser at anchor in the outer reaches of Kavieng Harbor. Although it was a clear night with a full moon, Lt. Lloyd pressed his attack to a low altitude, scoring hits on the target. AA fire hit his plane again and again, but did small damage to the *Catalina*. Another Navy Cross winner for VPB-52!

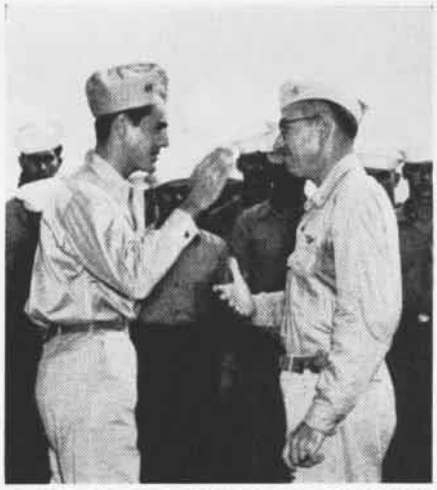
By the time VPB-52's tour of night offensive attacks had been completed, 31 December 1943, its attacks had resulted in damage to two cruisers, two submarines (assessed by the squadron as sunk), and three destroyers. In addition, 34,000 tons of merchant shipping were sunk, 10,000 tons probably

sunk and 32,000 tons damaged. In all, 137 misssions were flown. Patrol coverage was also given for the bombardment by Seventh Fleet cruisers and destroyers of Gamata, New Britain, on 29 November. Coverage was provided for the invasion force at Arawe, the night of 14 December.

IN THE Presidential Unit Citation bestowed upon VPB-52 almost a year later, tribute is paid the squadron for its outstanding service in the Bismarck Sea area from September 15, 1943 to February 1, 1944: "Rendering pioneer service in changing the passive, defensive search into a bold and powerful offensive, Patrol Squadron FIFTY TWO has utilized the full potentialities of the PBY seaplane and its equipment, locating enemy task force units and striking dangerously by night in devastating masthead, glide-bombing attacks to insure vital hits on the target. Dauntless and aggressive in the fulfillment of each assignment, the gallant pilots of Squadron FIFTY-TWO conducted daring, lone patrols regardless of weather in a continuous coverage of this area, intercepting and attacking so effectively as to inflict substantial damage on hostile combat and other shipping, to deny the enemy the sea route between New Ireland and New Britain and thus prevent the reinforcing of important Japanese bases."

The first two months of 1944, VPB-52 was stationed at Port Moresby where it engaged in convoy and air-sea rescue missions. Then, after a period of rest, the squadron moved up to Seeadler Harbor in the Admiralties to conduct daylight searches to the north.

On March 28th, Lt. (jg) Robert D. Kunkle wished for a moment he were safely back home in Indiana. When he was on patrol 125 miles north of



COMMODORE COMBS PRESENTS DFC TO LAHODNEY

Manus, he spotted what he thought to be a friendly task force. As he approached to investigate, he was attacked by four F6F's. The *Hellcats* pumped 37 .50 caliber slugs into the *Catalina* before they recognized it as friendly. Although his aileron cables were severed, Kunkle brought the crippled *Cat* safely back to base. But Death had travelled near, escorted by Folly who laughed at IFF.

While based in the Admiralties, VPB-52 made six medium altitude bombing attacks against airfields at Woleai in the Carolines and two on air facilities at Wakde Island off New Guinea, all at night. Air-sea rescue missions were flown for strikes on Woleai, Truk and Yap Islands.

From May 15 to July 16, night operations, principally anti-shipping, were conducted from Humboldt Bay, Hollandia, over Vogelkop Peninsula and Geelvink Bay. During the tour, 33 night scouting missions were flown in cooperation with the Seventh Fleet to support landings at Wakde, Biak and Noemfoor Islands.

From the middle of July to the end of the tour in December 1944, VPB-52 stationed at Biak, engaged in air-sea rescue missions which were hardly less exciting than *Black Catting*. To land the bulky *Catalina* in the open sea, sometimes within range of enemy shore bases, was no simple task, its hazard occasionally increased by rough seas.

One open sea landing, typical of 13 such rescues in which 33 downed airmen were saved, was spectacularly made off Rabaul 15 October 1944 by Lt. Richard Stell, an excellent *Black Catter*.

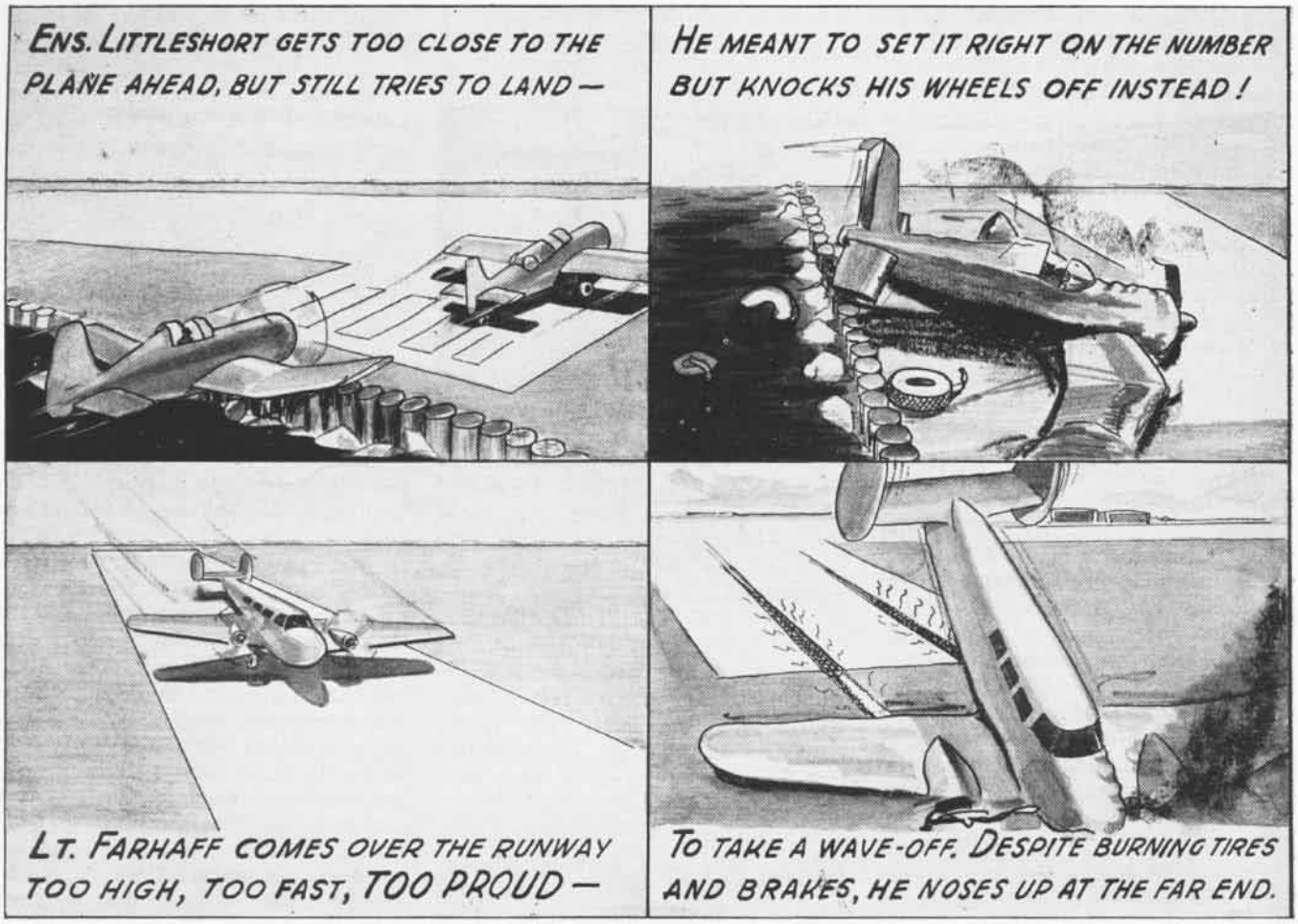
A Marine *Dauntless* had made a forced landing. The raft which carried the pilot and crewman was drifting shoreward despite the efforts of its frantic paddlers. There wasn't time for an American surface vessel to reach them. A *Cat* must get them out or they would be captured. Although the sea was rough and shore batteries were geysering the sea around the drifting raft, Lt. Stell elected to attempt rescue. The heavy load of gasoline—800 gallons—added to the hazard of landing under these conditions. Stell made a safe landing, picked up the survivors and took off. One shell landed close but did not hit.

On 6 December 1944 after 18 months in the Pacific, VPB-52, detached from the Seventh Fleet, turned home.

ComAirPac's farewell commendation was a merited salute: "Many Alohas from Hawaii. VPB-52 and her *Black Cats* have made a record that will long stand in the forward combat areas. ComAirPac takes pride in extending congratulations on behalf of Air Force, Pacific Fleet. May you enjoy your well earned leave half as much as the slant eyed Nips will your absence from the combat zone. Well Done."

STELL (FRONT, CENTER) AND CREW MADE DARING RESCUE IN THEIR 'CAT.'

LT. KUNKLE'S CREW ESCAPED HELLCAT BULLETS IN NEAR TRAGIC MIX-UP



TOO SHORT OR TOO LONG

Moral: Don't be too proud to take a wave-off after a poor approach.

FLIGHT SAFETY

From the standpoint of damage to aircraft and injuries to pilots, there's just one type of landing that is worse than an "overshoot"—and that's one in which the plane lands before ever reaching the runway. Believe it or not, this type of accident is fairly frequent. In a recent ten-day period there were four accidents in which pilots simply failed to carry enough throttle to reach the runway. In three cases the pilots were attempting to land extra short because of a very close interval on the planes landing ahead of them in the traffic pattern. In all these instances it would have been very easy to go around again.

Landing short of the runway, when normal power is available, is a particularly difficult sort of accident to explain. The corrective action which consists of simply adding a little throttle is so easy that even the pilot involved in the accident can't understand how the whole thing happened.

In the fourth case an instructor was demonstrating a power-off approach and landing from the 90° position. He made his approach a bit too long and it was soon evident that it would be a tight squeeze to get in the field. Instead of adding a little throttle and explaining to the student that he had misjudged that demonstration, the instructor raised the nose of the plane and tried to stretch his glide. *He'd make it or bust*—and he really did. He landed in a bunch of stumps just fifty feet short of the field.

The far more common error of *landing too long* caused 21 recent accidents, most of which ended in nose-ups or intentional groundloops to prevent going off the end of the runway. In several cases the pilots admitted that they had been "spoiled" by continually using runways five or six thousand feet long, and they just didn't think to land short when going into relatively small fields.

In one case the pilot of a PB4Y-2 was making a practice GCA approach under contact flight conditions without the use of a hood. The service runway was 6,000 feet long. The pilot maintained excessive speed throughout his GCA approach, and when he went off instruments at an altitude of fifty feet over the end of the runway, he was still doing 130 knots. He chopped his throttles and lowered full flaps, and the plane did not touch down until 4500 feet of runway had been used. Brakes were applied and the PB4Y-2 skidded the remaining distance to the end of the runway. Apparently the port brake locked because the tire on that side blew out just as the plane neared the end of the runway. The *Privateer* skidded an additional 300 feet, damaging the wheel rim, and turning 90 degrees to the left.

In attempting a landing with this position and speed the pilot showed very poor judgment. The copilot, in his capacity as a safety pilot, should certainly have called the pilot's attention to the excess speed, particularly if he knew that he intended to make a final landing.

Play it safe. Land in the 1st third of the runway. If you make a poor approach and can't do this, go around again.

TECHNICALLY SPEAKING

SOURCE CODING TEAM MEMBERS POOL THEIR VARIED EXPERIENCE FOR A HIGHLY IMPORTANT JOB

Source Coding Pays

WHAT are source codes? Of what use are source codes to you? How are source codes assigned? Why do we have source codes?

Source codes are a system of letters and a symbol assigned to each and every airframe part of all the thousands of airframe parts that go into the construction of each Navy plane. Your illustrated parts catalogs carry a column on each parts page labeled "Source Code." Opposite each part number is a code letter. The source codes are used to indicate the source of supply for obtaining each individual part.

The source code tells you at a glance that the part you need can be *manufactured* by you or an Overhaul & Repair department. The source code tells you if the part is *procured* for you by your supply officer or in a pinch may be manufactured. The source code tells if the part is made up of two or more units and is to be *assembled* by you or your nearest O&R. Finally, the source code tells if the part may be obtained by ordering the *next larger* assembly.

Source codes are assigned by teams of highly qualified Fleet, Overhaul & Repair, Bureau of Aeronautics and Aviation Supply personnel who meet with contractor's personnel at the contractor's plant before the first production aircraft is delivered. The Fleet personnel provide the really vital operating maintenance experience. The O&R personnel provide the extremely important technical and manufacturing experience as well as the overhaul and repair maintenance experience. The BUAER and Aviation Supply personnel provide the necessary conference guidance. They bring a background of invaluable experience gained from many previous coding conferences.

The coding team reviews each and every drawing of each and every airframe part to decide what code letter should be assigned. Often the team inspects the part actually installed on an aircraft.

A phase of the Integrated Aeronautic Program dealt with the difficult problem of identifying the supply source for maintenance parts. Aviation Circular Letters 128-44, dated 26 December 1944, and 112-47, dated 14 November 1947, were released to all fleet and overhaul activities to describe the system of codes. The introductions to most of the illustrated parts catalogs also describe it.

These Aviation Circular Letters list eight code letters and one symbol, one of which can be assigned to any one of the approximately 18,000 individual parts for any average naval aircraft. The codes are self-sustaining and self-explanatory.

For instance, if the code assigned is "P", it is known, by reference to the definition, that the part is *procurable*, for it is usually a high usage item and will therefore be stocked by the supply officer. However, it also indicates that the part can be manufactured in restricted quantities. An entirely different reason governs the code "P1", for this is an item that is generally *procured*. Its manufacture is impractical.

CODE "M" is a relatively low usage item that can be manufactured by dependent type activities or by supporting Class "A" activities. Occasionally, as experience indicates, "M" coded items are recoded to "P" as high usage develops. The "M1" code is used when manufacture of the part is within the facilities of Class "A" or "B" supporting activities. As with "M" items, "M1" items are low usage items. Often one or two of the industrial activities are specifically assigned the work of manufacturing all of the Navy requirements for the particular "M1" item.

Code "A" is assigned to assemblies made up of two or more units and which can be assembled by any maintenance activity. Code "A1" is assigned to assemblies that require the facilities of Class "A" or "B" activities. Remember that each part of the assembly bears its own individual code.

Code "X" applies to *main* or major *structural* members difficult to replace without major "teardown" of the airframe. Code "X1" applies to an *integral* part *inseparable* from its assembly such as a matched part. The difference between "X" and "X1" lies in the possibility of obtaining an "X1" part through requisition of the next larger assembly, usually in the "P" or "P1" category. "X1" may apply to a very small part as well as a large part.

Finally, code symbol "*" applies to such unrequisitionable items as installation drawings, or obsolete parts.

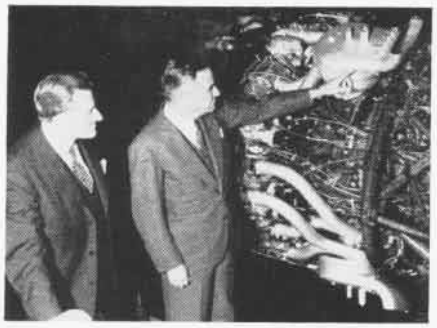
Procurement of operational and overhaul maintenance spares depends in large measure on the codes assigned. An error in the assignment of one code letter can result in AOG airplanes sometimes 12 to 18 months from the day of assignment. Complete and adequate source coding means better support for Fleet operations. It means fewer overhaul and repair program difficulties. It is the cornerstone of any aircraft operational and overhaul program, and as such should be cemented with the combined experience of the Fleet, the O&R departments, ASO, the aircraft contractors, and of the Bureau of Aeronautics.

Send Reports to Right Spot

In 1946, cognizance of certain armament material, including towed targets, chemical tanks and bomb racks, was transferred from BuOrd to BuAer.

BuAer, however, continues to receive RUDAOE's, via BuOrd, from the service, instead of RUDM's. This practice necessitates a forwarding letter on the RUDAOE from BuOrd to BuAer with its attendant delay. Activities sending in the reports will save a little red tape and time by submitting the correct form.

ACL-111-46, still in effect, listed the ordnance items which were transferred from BuOrd to BuAer cognizance, a list 45 pages long which included gun chargers, smoke screen equipment, bomb hoists, intervalometers, bomb shackles, skids, trucks, tow targets and reels.



THREE TURBINES BOOST WRIGHT ENGINE POWER

Wright Develops New Engine

A new type engine designed to increase substantially the speed and range of Naval aircraft has been ordered by Bureau of Aeronautics.

A contract for purchase of this type engine, known as the "Turbo-Cyclone 18," has been placed with the designer, Wright Aeronautical Corporation of Wood-Ridge, New Jersey.

The "Turbo-Cyclone 18" employs a compounding system to recover the energy normally lost through exhaust gases. These gases, when used to operate a series of turbines, generate power which is transmitted directly back to the engine crankshaft. Increased horsepower is developed by the engine without increasing the fuel consumption.

Fuel savings throughout the entire operating range are more than 15 percent. When installed in Naval aircraft, the "Turbo-Cyclone 18" is expected to result in increased power and speed, as well as range.

The engine combines the conventional Wright Cyclone 18 reciprocating power plant, which is currently used in the P2V *Neptune* and AD-1 *Skyraider,* with three velocity turbines operated by the exhaust gases.

The compounding elements of the "turbo-Cyclone 18" fit into the basic engine design with little change in size or appearance. For this reason, little engineering is required to install the new type engine in an airplane that uses the Wright Cyclone 18 engine.

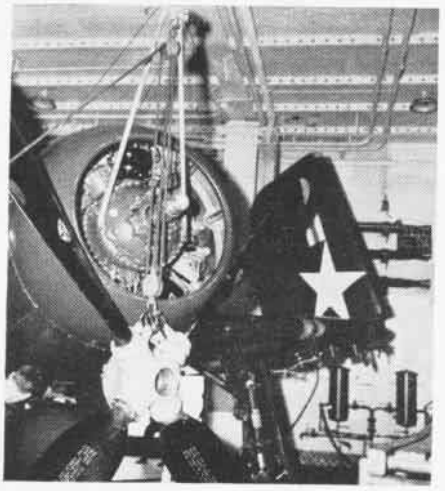
The "blow-down" or low pressure type of turbines used, harness the kinetic energy of the exhaust without requiring large pressure differentials. Consequently, they do not impose high exhaust back pressures on the cylinders and impair the efficiency of the basic engine, but do operate effectively at both sea level and high altitudes. For the same reason, there is no additional stress on the reciprocating parts of the engine.

Each of the three turbines is mounted on a quill shaft that transmits the power from the turbines to the engine crankshaft.

An F8F Portable Prop Hoist

Portable propeller hoists seem to be in vogue these days (Oct. NANEWS, p. 34) but for its purpose, a new F8F hoist takes the brass ring. Developed and thoroughly tested aboard the USS *Kearsarge,* it is felt the new hoist could be adapted to other types of aircraft.

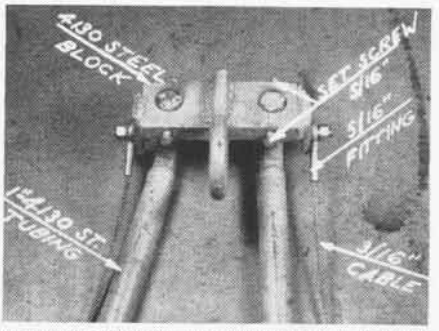
The necessity of having a plane positioned under the "I" beams, pad-eyes or hoist on the hangar deck to change a prop prompted the development of a faster and simpler method. Originally the portable hoist was intended for emergency use only, when standard methods meant a loss of time. However, the hoist worked so well during the carrier's refresher training of Air Group Three, it was adopted for all routine propeller changes.



KEARSARGE FINDS THIS HOIST FAST AND SIMPLE

The unit consists of a "Y" affair, which is bolted right on the crankcase using stud-protectors. The triangle is braced by a couple of steel wire cables running back to the accessory section. Add an ordinary block and tackle and that's it.

The time required to remove and replace a propeller with the new hoist is about 45 minutes. Changing propellers by the standard method of moving the plane under a pad-eye or "I" beam and rigging a chainfall or block and tackle, requires a minimum of one hour, plus the additional labor involved. With the portable hoist, the prop can be changed on the spot—any spot.



THE COMPLETE UNIT WEIGHS ONLY 24½ POUNDS

BuAer, Grumman Aircraft and Aero-Propeller have all put their blessings on the new portable hoist and recommend its use where an advantage can be gained.

Time Cut for F6F Change

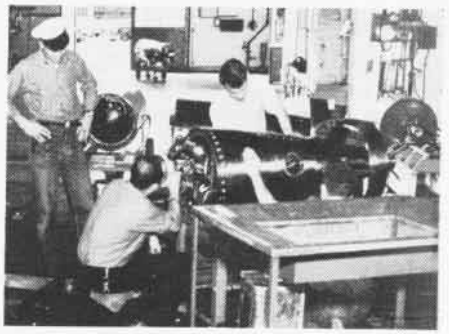
VMF(N)-513, El Toro—In making the change directed by F6F *Aircraft Bulletin No. 133,* MSgt Ambrose K. O'Brien, metalsmith, devised a method whereby the change can be made by removing a minimum of cowling and accessories and without removing the air intake duct from the accessory section.

The air intake collar assembly is removed, allowing access to the plate which covers the air intake screen and rubber cushion, P/N 26885-5. One-quarter inch is cut off the overlapping edge of the plate to gain access to the five rivets which secure the hinge of the mainstage air intake door. The heads of the rivets are drilled off with a right angle drill attachment, allowing them to be punched out. By reaching into the duct assembly, the rivets are caught by hand and taken out.

There is no possibility of filings or drillings falling into the duct, and rivets are counted to insure that all have been removed. When the door assembly is reinstalled, the rivets are bucked from within the duct by using a metal bar one inch thick, two inches wide, and six inches long.

Incorporating the change in this manner has cut the time of installation from two days to one-half day per plane.

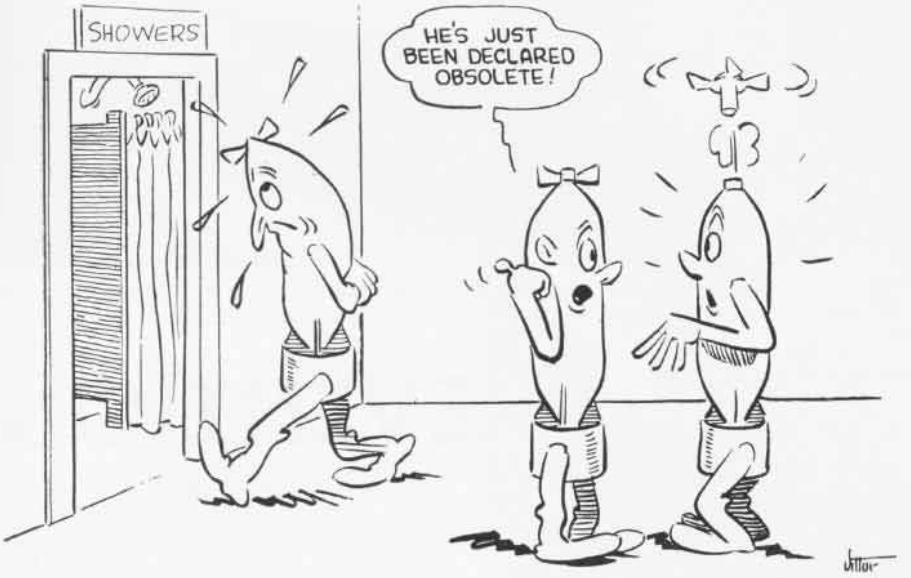
▲ *BuAer Comment*—**This method appears to be satisfactory. No harmful effects will result from cutting ¼" off the plate to gain access to the rivets.**



***Five hundred** aircraft torpedoes are in NAS Alameda's torpedo shop for cleaning and overhauling. Eleven enlisted men under Chief W. J. Eckert (standing) turn out five torpedoes a week at the torpedo shop. Each costs $10,000*

AVIATION ORDNANCE

ENQUIRIES SHOULD BE ADDRESSED TO THE CHIEF OF BUREAU OF ORDNANCE



Practice Bomb 'To Showers'

MCAS QUANTICO recently reported failure of the welded joint between the tail assembly cone and the body cylinder of the 100-lb water-fillable practice bomb, M38A2. This failure indicates poor welding during production. Information from the Department of the Army confirms the probability of this type of failure in those bombs produced prior to September 1943.

Instructions for scrapping stocks manufactured prior to September 1943 have been issued to all operating and supply activities.

Accidental Firing of Flare

A recent report to BUORD discussing the loss of a TBM-3S aircraft attributed the accident to the ignition in the bomb bay of an aircraft parachute flare Mk 6 Mod 4.

The flare was incorrectly installed, with the fuze end aft, and the suspension bands of the flare were sufficiently loose to permit it to slide through the bands far enough for the lanyard to ignite the fuze. The commander of the task group concerned, in forwarding the report to BUORD suggested that a large piece of adhesive tape be fastened to the flare before tightening the bands in order to prevent relative motion between the flare and suspension bands. The Bureau concurs in this suggestion and it will be included in a future change to OP 998 "Aircraft Pyrotechnics and Accessories."

The installation, with fuze end aft in the bomb bay, was incorrectly made in accordance with the instructions contained in OHI-V5-44 which applies only to the installation of Mk 6 flares in the flare container Mk 1 Mod 0. The instruction labels attached to each flare do not provide for installation of the flares in bomb bays. In order to cover all possibilities, instructions for the installation of all types of flares in all possible locations were included in the first revision of OP 998 which superseded OHI-V5-44 and amplified the instruction labels on the flares.

A BUORD circular letter is under preparation to require that notices referring to OP 998 be plainly marked on the flare shipping boxes, and it has been suggested to BUAER that similar notices be applied to the boxes containing the flare container Mk 1 Mod 0. MEANWHILE, ALL USING ACTIVITIES ARE CAUTIONED TO INSURE THAT *ALL* AIRCRAFT PARACHUTE FLARES ARE INSTALLED IN ACCORDANCE WITH THE DIRECTIONS CONTAINED IN OP 998.

Link Load Machine Recalled

Due to the unsatisfactory performance of the 20mm link loading machine, Mk 5 Mod 1, it has been requested that all supply activities discontinue its issue to operating activities.

This machine presently appears on allowance lists to naval air bases, Marine aircraft squadrons, Marine aircraft group service squadrons, and NAVORD List 21486, Revision C, dated 15 May 1948, Aviation Ordnance Allowances to Ships.

It is considered that the present allowance of M13 hand-operated link loading machines appearing in each of the aforementioned lists will be adequate to meet the needs of the operating activities concerned until design changes have been completed and the Mk 5 Mod 1 is again made available for issue.

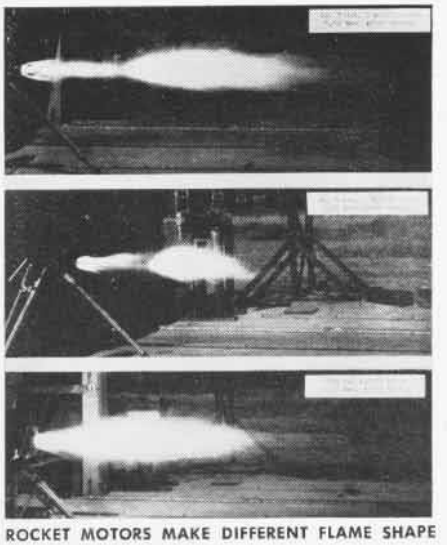
Rocket Exhaust Flame Photo

Scientists of the Naval Gun Factory, Washington, D. C., are constructing an instrument to measure the temperature of the incandescent matter in the exhaust flames of aircraft rockets. The device makes use of the fact that the color of the luminous particles depends on their temperature.

A mathematical relationship for this phenomenon was first devised by the German physicist, Wilhelm Wien. A similar but more exact mathematical law was deduced by another German physicist, Max Planck. According to these laws, a definite amount of light of every color (or wavelength) is emitted by a perfectly-radiating body at a given temperature; for a different temperature the amount of light being radiated would be different. Actually, it turns out that the temperature can be determined with considerable accuracy if the intensity of light at two wavelengths is measured.

Accordingly, the instrument spectroscopically isolates two wave lengths (or colors) and measures the amount of light in each. These quantities are electronically measured and recorded in about 5/10,000 of a second, so that the instrument can easily register very rapid temperature changes in the rocket blast.

With this new information about the temperature of rocket exhaust flames, the Navy hopes to construct improved aircraft rocket installations and safer rocket launchers for United States fighting planes.



ROCKET MOTORS MAKE DIFFERENT FLAME SHAPE

Get Messages From Rockets

A miniature telemetering system weighing only a few pounds and capable of continuously transmitting scientific information from a rocket soaring through space at nearly 3,000 miles an hour has been successfully flight tested by the Navy at the White Sands Proving Ground, Las Cruces, N. M.

Known as the *Aerobee* telemetering system, it has been initially used in the *Aerobee*, new Navy sounding rocket, which in the first test with the miniature telemetering system reached an altitude of 71.78 miles above the earth and attained a maximum velocity of 2,830 miles an hour.

During the first and a subsequent *Aerobee* flight, the telemetering system radioed to the ground recording instruments continuous information on flight characteristics, motor performance and missile aspect, data on cosmic ray intensity, the quality of sunlight above the atmospheric blanket and changes in the strength of the earth's magnetic field. The system has been used to transmit 24 different kinds of information to the ground.

Aviation items needing minor repairs are put in shape before preservation; here a wing tip is receiving attention

Special packing insures that this twenty millimeter aircraft gun will reach its destination in ready-for-issue condition

AN OUNCE OF PREVENTION

PRESERVATION is an important business at the Aviation Supply Depot, Naval Supply Center, Oakland. Started as a result of observations made on damaged and corroded material received in the South Pacific during the war, and on stock sent back from forward areas, the preservation of aviation materials has increased greatly in the past three years. Several million items have been processed in the preservation shop since its inception.

ASO, BUAER, and BUSANDA all gave assistance so that a start could be made, and from a small beginning in 1945, the volume of aviation stock preserved has risen to an average of 300,000 individual items each month.

Spark plugs were one of the first items to be preserved in any quantity. Aviation spark plugs are expensive and subject to rapid deterioration, so an extensive canning operation was set up to take care of the more than three million spark plugs then in stock. At that time cans were difficult to procure. However, surplus Army butter cans were found to be satisfactory, and these were used in place of the regular #10 cans to expedite the work.

The preservation of aviation bearings was another big job. Bearings are especially subject to corrosion. All ball bearings in stock, a little over a million and a half, were preserved individually and stock numbers verified. The bearings all were preserved in accordance with AN-P-36A and stock numbers changed to the new Class 77 numbers. While this job was going on, the shop attained an average of 20,000 bearings preserved a day.

Preserving all aviation materials that need it is a tremendous undertaking. Besides the several million items for stock, material must be preserved for overseas shipments, Pacific Reserve Fleet, material in process of transshipment, and contract material being received.

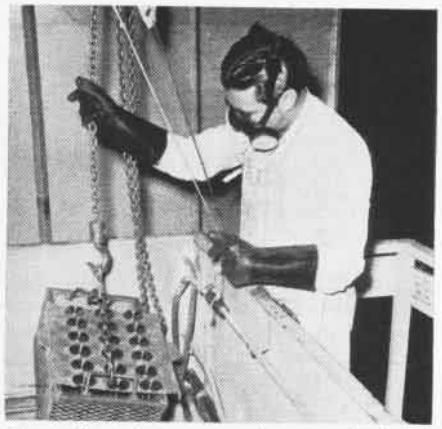
It is the intention of the Aviation Supply Depot to preserve practically all material being shipped overseas, in order to minimize the effects of salt air, high humidity, and exposure on finished metal parts and delicate assemblies. Material for the inactive reserve fleet is processed in the same manner.

Preservation of all aviation allowance quotas for aircraft support vessels in the Pacific Reserve Fleet in 1947, set a high mark for volume of material handled. A deadline date was met ahead of time and the preservation shop was commended for its performance.

Some material in process of transshipment from a manufacturer to an overseas destination is routed through ASD's preservation shop for processing. Aviation Supply Depot, NSC, was designated by the Bureau of Supplies and Accounts to preserve this material. This is not aviation stock alone, but anything that might be purchased by the Navy and shipped direct from manufacturer to an overseas activity. Some manufacturers now preserve contract material at the factory. Those who are

Packages of aviation material are wax-dipped for more complete protection

Turret plexiglas is polished prior to the application of a plastic coating



Aircraft valves are degreased in a vapor bath at the start of preservation

unable to do so have their material sent through the preservation shop after receipt by the Navy and before it is stowed in warehouses. This saves time and money in the handling of supplies.

Currently the emphasis is on canning everything suitable for this type of preservation. Spark plugs, aviation instruments, coil assemblies, solenoids and similar items are preserved in cans of varying sizes. The cans have the stock number and nomenclature printed on them with rubber type in a machine invented by two of the shop employees. A number of methods of preservation are used, including Methods I, IA, IB, and II. Method IB, plastic dip, is used on engine valves, precision gears and other similar items.

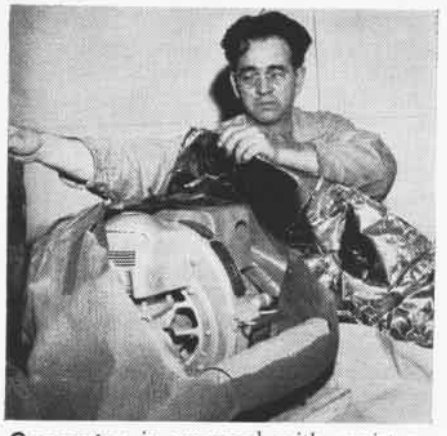
SOME minor repair work is done on items which do not affect safety of flight. This is done primarily on items which otherwise would be surveyed or shipped to a major air station and which a little repair work would place in a ready-for-issue condition. The saving in time and money on these small repair jobs amounts to a considerable sum over a period of time.

The preservation shop operates at the present time with a limited number of people. These include preservation mechanics, aircraft mechanics, helpers, laborers, and packers. A receiving section first receives material, and stock numbers, part numbers and quantities are checked by mechanics. The material is cleaned, preserved, packaged and labeled according to the applicable JAN specification and sent to storage or shipping. The present backlog of material in the Aviation Supply Depot needing preservation is approximately 16,000,000 items.

Preservation has shown that it pays for itself, judging from the reports on aviation stock sent overseas. Material adequately preserved gets there in ready-for-use condition. Material not preserved is frequently a total loss.

Spark plugs are expensive and subject to rapid deterioration but canning protects them; note stock numbers and other data printed on cans for ready identification

Final stage of the preservation process for aircraft valves is plastic dipping



Generator is wrapped with moisture-proof non-corrosive foil for storage

Aviation compasses are given their first wrapping in a non-corrosive paper

SERVICE Test
INTERIM REPORT DIGEST

This digest covers the 15 October Interim Report of Service Test, NATC PATUXENT, and does not necessarily reflect BUAER policy.

AD-2 (213 Hours)

Cowl Bow Support. One rear cowl bow support bracket installed on No. 15 cylinder was found broken, fourth failure of this type. *Recommend* that contractor provide stronger cowl bow support bracket.

Exhaust Stack. After 39.5 hours engine operating time, two of newest type stand off brackets, P/P 5258899-95-95, were found broken. These are sixth and seventh stand off bracket failures. *Recommend* that contractor provide stronger exhaust stack stand off support bracket.

R3350-26W Engine. After 213 hours of engine operation, No. 12 cylinder was noted to discharge puffs of white smoke. Cylinder compression was 96 lbs. per square inch. Removal for examination revealed following discrepancies:

Intake pipe seal at cylinder was deformed. Top compression piston ring was missing. Nicks were found on piston head, cylinder head, exhaust valve and exhaust valve seat, indicating that ring had been expelled from cylinder through exhaust-valve port. Segments of ring lands on each side of this ring were missing and area was guttered. Both the thrust and anti-thrust sides of piston were scored. A slit was noted between exhaust valve seat and exhaust valve seat retainer ring, located in an area to the left of a line drawn between the front spark plug and exhaust valve guide. Slit was 1" long, .015" wide and 3/8" deep. Oil and carbon deposits were observed beneath the slit on the valve seat, indicating possible gas leakage between concentric rings of the seat.

Cylinders 8 and 10 were pulled to check exhaust valve seats for similar conditions; both had floating seats. Exhaust valve seat for No. 8 had .010" radial play and approximately 1/32" end play. Exhaust valve seat for No. 10 cylinder had .0.5" radial play and approximately 1/16" end play. This seat was being pounded into the head and was pushing a ring of the cylinder head metal in front of it. Cylinders 9, 11, 13, and 14 were examined through exhaust valve ports and were also found to have floating seats.

An R3350-26W engine equipped with solid shrunk-in exhaust valve seats will be installed and the 450 hour accelerated service test of the R3350-26W engine started anew.

Recommend 1. That engine manufacturer design an exhaust valve seat to last the service life of the engine. *2.* That all R3350-26W engines equipped with concentric exhaust valve seats be inspected for loose seats after the first 150 hours of operation and on subsequent 60-hour checks and if any loose exhaust valve seats are found, that the engine be changed or new cylinders be installed.

Valve seats can be inspected as follows: Remove exhaust valve system and open each exhaust valve by rotating the propeller. With the valve open, insert a 10-inch screw driver into the exhaust port and attempt to turn the exhaust valve seat by applying pressure to the side of the seat, not on the seat face. Any movement will indicate a loose seat.

3. That engine manufacturer exercise greater care in installation of intake pipes.

4. That engine manufacturer investigate cause of piston ring failure.

F8F-2 (46 Hours)

Hydraulic Line. During disassembly of the "T" fitting connection, the flared end of the hydraulic line between "T" fitting on the accumulator and first elbow of the pressure line to the hand pump selector valve was found broken. Line had been so stressed that when connection was disassembled the line moved out of alignment by a distance of one inch. The nut, P/N AN818-8D, had also been excessively torqued. *Recommend* that contractor exercise more care in assembly.

Hydraulic Leak. During a routine test flight, all hydraulic pressure was lost, necessitating an emergency extension of main landing gear. Investigation showed that flared end of the hydraulic line at the relief valve connection had cracked, allowing hydraulic fluid to leak from main hydraulic landing gear system. The nut, P/N AN818-8D, at this connection had been tightened excessively. *Recommend* that contractor exercise more care when tightening hydraulic fittings.

Pressure Relief Valve. During routine test flight an excessive amount of oil was observed streaming over engine cowling. Crack had developed in oil tank and tank had bulged in two places. Crack occurred at a point where tank is welded to internal baffle. Prior to the flight aircraft had not been operated for two weeks. During this period it is believed that oil in the tank had seeped through the slots in the valve sleeve of the main oil pressure relief valve and into the rear case of the engine accessory section.

The plane captain, unaware of this condition, checked the oil level, found it low, and filled the tank to 14 gallons. As result of this additional oil in the oil system, excessive pressure was applied within the tank by the scavenger pump which has a much larger capacity than the pressure pump. This pressure was sufficient to cause the oil tank failure. Pratt and Whitney Engineering Change No. 25114 incorporates a longer valve sleeve which prevents any oil from draining to the accessory section when the engine is stopped. *Recommend* that all activities be directed to comply with this Change immediately.

AM-1 (340 Hours)

Hydraulic Pump. After 325 hours, the hydraulic pump, Pesco P/N 1P794A, developed leak around threads of one of the pump case attachment studs. Stud was found to be tight in the pump case. *Recommend* that contractor investigate.

Door Assembly. A left hand half fork door, P/N 10-4900015-1, drawn from local supply stock could not be installed properly without first elongating the four bolt holes provided for attachment of the door to the landing gear strut. The door was positioned too far inboard by the original holes, allowing the outboard edge to enter the wheel well. *Recommend* that contractor investigate and correct the discrepancy described above.

The airplane, along with all model AM-1 aircraft, was grounded on 4 October until a suitable carburetor is provided.

P2V-2 (317 Hours)

Engine power usage will be limited to 65% of normal rated power, except when required, until engine cylinders equipped with modified exhaust valve seats become available. Emphasis will be on use of all ordnance equipment during next 100 hours.

Deflector Assembly. The deflector assembly, cylinder head, R-3350-24W engine, P/NP/N 425036N1, cracked at a point where the left leg makes a 90° bend. Crack was approximately 2" long. Three deflector assemblies have cracked in exactly the same manner, each after approximately 75 test hours. Modification No. 22 for R-3350 engines provides for reinforcing and strengthening deflector assembly at this point.

Flare Chute Installation. Closing of the flare chute doors by the foot pedal installation is considered unsatisfactory because:

1. The doors will not lock closed unless an excessive pressure is exerted on the foot pedal. Sufficient leverage to overcome the spring loading of the doors in the open position is not provided.

2. Unless chute door closing pedal, P/N 133070-18, is carefully guided during the closing operation, the lever, P/N 133070-36, and the door lug, P/N 133070-33, are subject to jamming on the lower edge of the chute tube.

3. When the front door is closed, with the rear door previously closed, the lug of the rear door contacts the rear flare release solenoid.

4. When opening and closing the doors, the clevis bolt in the end of the lever, P/N 133070-36, rubs the side of the rear chute tube.

Recommend that manual lever for closing the flare chute doors be redesigned to incorporate a hand operated toggle rod mounted on the top platform of the chute assembly.

Exhaust System. A three-inch crack was found in the bead of the weld (exhaust manifold, P/N 51758-105) which attaches the tail pipe section to the collector ring segment.

A two-inch crack was found in the exhaust manifold section aft of the No. 10 cylinder

port. Crack was under the data plate which is spot welded to the under side of the manifold. Application of heat when making the spot weld is believed to have contributed to weakness at this point. *Recommend* that data plate of the exhaust manifold weld assembly be attached by a method other than spot welding.

Two exhaust clamps were cracked and broken. Failures occurred at end of bolt fitting which is welded to the clamp. Five clamps have failed to date.

Astrodome Handle. Handle, P/N 138481-20, broke at the two points where the aluminum tubing was crimped and attached to the astrodome by bolts, after 236 test hours. *Recommend* that astrodome handle be made of stronger material.

Packing. Landing flap selector valve control knob is secured to the valve actuating shaft by means of a locking pin, P/N 62839, which is inserted through the knob and shaft. An "O" ring packing is inserted in a groove around the knob to retain the pin. The "O" ring broke, allowing the pin to drop out of the knob, and the knob and manual control spring, P/N 62978, to drop off the valve shaft. Two such knobs are on the flap hydraulic selector valve and both failed in the same manner. The "O" ring was replaced with a metal snap ring. *Recommend* that rubber packing ring now installed around the knob as a pin retainer be replaced by a metal snap ring.

Propeller Pitch Control. Present propeller pitch control system incorporates a trial and error method of setting a desired RPM on each engine followed by manual synchronization. A synchronizer control which would enable the pilot to set any desired RPM on the engines, followed by automatic synchronization, would be invaluable.

Recommend that synchronizer control similar to the Hamilton Standard propeller synchronizer which was service tested in the PB4Y-2 be considered for installation in the P2V-2.

Lower Engine Cowl. Cracks and tears were discovered in the interior lower surface of the oil cooler duct of panel assembly, lower engine cowl, as result of metal fatigue brought about by flexing surface in flight. Angle stiffeners were added in the affected area, but after 297 test hours, two additional cracks approximately 2" long developed in lower surface forward of the two angle stiffeners. *Recommend* that contractor take immediate action to provide a fix or redesign panel assemblies to prevent failures of this nature.

Varicam Motor. Failure occurred during pre-flight ground check after 247 test hours. Brushes and commutator had overheated and burned. Operating limits had been complied with.

Varicam Control System. Varicam control switch is mounted on pedestal between the two pilots. Since varicam operates at a single speed, several seconds are sometimes required to obtain control changes. During this period, with one hand on the pedestal-mounted varicam control switch, the pilot cannot operate the throttles or use two hands on the control wheel.

To alleviate this, two push button type switches, No. R17-3-25213-23, were installed on the control wheel; top one for nose down and bottom one for nose up. Rocket firing push button was moved toward center of wheel, but can still be reached with varicam control push button switches installed as noted. Original armament installation on plane had both the gun and rocket firing push buttons on left side of control wheel and the bombing push button on right side. An Armament Test report recommended removal of gun firing button to right side so that guns and rockets could be fired simultaneously. This change has been made. Installation is considered satisfactory.

Nose Wheel Down Lock. No means has been provided to check visually the nose wheel down lock. Standard policy is to check landing gear position by means of the indicator, but in event of failure of this instrument, failure of micro-switch mounted on landing gear upper link jury strut, or an electrical failure, the down lock cannot be positively checked. Nose wheel, when down, can be seen from nose wheel well entrance door, but down lock cannot be positively checked, and use of this procedure is considered dangerous.

As remedial action, a window was installed in port side of nose wheel well bulkhead through which nose wheel down lock can be seen. Window can be reached through nose compartment tunnel. A hole 4" in diameter was cut 8" above the deck in the port bulkhead of the nose wheel well at stations 136 to 140. A round piece of plexiglas, 3/16" x 5 " was mounted between sponge rubber and secured with nine 8-32 x 1/2" truss head screws. *Recommend* that a similar window be installed in all P2V aircraft.

Pilot's Handbook. It is considered imperative that the standby flight instrument power source be checked prior to flight to determine its availability in case of a main power supply failure. A statement should be added under Section II, paragraph 2-42 of the Pilot's Handbook entitled "Before Taxiing" to the effect that the standby flight instrument inverter power switch should be turned on for a period of two minutes in order to check the operation of the standby inverter.

Also a paragraph should be added under Section III "Emergency Operating Instructions" explaining the use of the standby flight instrument inverter power switch as an emergency source of power. An hourly check of standby power should be made during flight. *Recommend* that Pilot's Handbook be amended to include instructions for operation and check of standby power for flight instruments and to emphasize to the pilot that all flight attitude instruments are electrically operated.

Brake Drum. On a routine 60-hour inspection, port brake drum was found badly scored. Eleven grooves with depths ranging from 3/64" to 5/64" were noted. Previous checks had showed numerous heat cracks. Brake blocks were imbedded with metal ridges which ran around entire circumference of the block assembly. Two brake blocks, P/N B27-166, were broken at retracting spring grooves, a condition which may have contributed to the scoring of the brake drum.

BOOKS

Significant American and International Awards in Aviation. Technical Information Branch, BuAer, Navy Dept., 1948, 51 pp. (Compilation of data on origin, purpose, rules, and past recipients of major aeronautical awards.)

A Simplified Introduction to High Speed Flight. T. F. Weldon. The author, Box 227, Osborn, Ohio, 1948, 42 pp., 75c. (Competent 42-page booklet putting high-speed flight information into simple, everyday English for the layman.)

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The RCAF Builds up. Harry Chapin Plummer. *Aero Digest*, Oct. 1948, pp. 19-21, 110-112, illus.

"Fury" for the Navy. Edgar Schmued. *Aero Digest*, Oct. 1948, pp. 28-30, illus. (North American FJ-1)

Wright's Turbo-Cyclone 18. *Aero Digest*, Oct. 1948, pp. 59, 105.

The Unsinkable Flattop. Cy Caldwell. *Aero Digest*, Oct. 1948, pp. 68-70, 108-110. (Another "conference" of the Admirals.)

Design of Turbojet Installations. Part. I. D. J. Jordan. *Aero Digest*, Oct. 1948, pp. 74-80, 119.

Propeller Considerations for High-Speed Aircraft. Harold H. Warden. *Aeronautical Engineering Review*, Oct. 1948, pp. 32-35, 87, illus.

A-Bombs and Air Strategy, Part II. Bernard Brodie. *Air Force*, Oct. 1948, pp. 33, 34, 36,

$1,000,000 Test Tube. Douglas Ingells. *Air Force*, Oct. 1948, pp. 35-37, illus. (USAF's vertical wind tunnel.)

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Russia's Fastest Service Plane. *Aviation Week*, Oct. 4, 1948, p. 15.

Parts Prospect. *Aviation Week*, Oct. 4, 1948, p. 17. (Standardization nearer as result of Air Force, Navy, Industry talks.)

Pressure Recovery Ups Jet Output. *Aviation Week*, Oct. 4, 1948, pp. 18, 19.

Navy Reveals New Night Fighter. *Aviation Week*, Oct. 11, 1948, pp. 12, 13. (Douglas F3D.)

World's Largest. Robert Hotz. *Aviation Week*, Oct. 11, 1948, pp. 14, 15. (Supersonic Wind Tunnel.)

New B-36 to Give USAF Greater Range. Robert Hotz. *Aviation Week*, Oct. 18, pp. 12, 14, illus.

New Supersonic Tunnel Largest Operating. *Aviation Week*, Oct. 18, p. 31, illus.

New Propeller Engines for the Air Force. *Aviation Week*, Oct. 25, 1948, p. 18.

A Nice New Pair of Wings. Ernest K. Gann. *Colliers*, Oct. 16, 1948, pp. 18, 19, 70. (An aviation story with a moral for pilots gets *Colliers'* fiction award.)

F-86—World's Fastest Fighter. Gaither Littrelll. *Flying*, Nov. 1948, pp. 15-17, 49, illus.

Will Subs Launch the Atom Air War. J. William Welsh. *Flying*, Nov. 1948, pp. 20, 21, 50, 52, illus.

If We Should Fight Again. Rear Adm. T. C. Lonnquest, USN. *Skyways*, Nov. 1948, pp. 26-28, 38, 44, 48, 49, illus.

Report of the Air Force. Gen. Carl Spaatz. *Skyways*, Nov. 1948, pp. 53-64, illus.

The Navy Has a Heart. Lt. Cdr. Beverley L. Britton, USNR. *U. S. Naval Institute Proceedings*, Oct. 1948, pp. 1213-1215. (NATS mercy missions.)

Developing a Successful Jet Trainer. F. A. Smith. *Western Flying*, Oct. 1948, pp. 13, 26.

SUPPLY NEWS
FROM ASO AND SUPPLY DIVISION BUAER

Metal Container Packaging

LIMITATIONS of funds and manpower for protecting materials within the aviation supply system against the hazards of storage, handling and shipment, both domestic and overseas, make it mandatory that maximum advantage be taken of all possible economies to reduce not only packaging costs but also related supply, maintenance and general overhead expenses.

One of the best approaches to this objective is to provide types of packaging which not only afford maximum protection at lowest cost, but also provide a means whereby materials may be stored, distributed, issued, inspected, tested, relubricated or completely overhauled in the speediest and most economical manner possible, keeping recurring packaging costs to an absolute minimum.

It was recognized by both aeronautical services as far back as 1944 that metal container packaging presented a vast field of opportunity for converting cumbersome, expensive, war-born methods to streamlined procedures required in an economy-minded peacetime era. Unfortunately, shortages of materials, strikes, production bottlenecks and similar causes impeded progress in this field of development, with the result that many wartime ideas still prevail and must be weeded out as soon as possible.

After several years of continuous effort, the Aviation Supply Office has succeeded in introducing a considerable range of metal containers, fittings, parts, and related equipment into the aviation supply system. It is expected that these will play an important part in expediting aeronautical materials to all corners of the globe and insuring their arrival in a ready-for-immediate-use condition. The success of such an objective is, of course, dependent on the complete cooperation and participation of all supply and maintenance elements.

Broadly speaking, metal containers for this program fall into three major categories:

A. Standard commercial tin cans, sometimes called standard food packers' cans.

B. Reusable metal containers, interior type, Specification AN-C-173.

C. Reusable metal containers, exterior type, Specification AN-C-152.

To provide a comprehensive picture, the following descriptive and usage information is furnished:

Category A

Description: The tin can consists of a body and a lid. The lid, compound-lined by the can manufacturer, is secured to the body of the can by a crimping operation which is known as hermetic, machine double seaming. The operation is performed with can sealing equipment which consists of an electrically powered machine, a seaming ring and a chuck. The seaming ring and chuck are specially designed to fit each can diameter and, therefore, can be used only for cans having exactly the same diameter. Slight variations in diameters will result in improper sealing. The platform or base which supports the can is adjustable and may be varied with the height of the can.

Use: The tin can is used as a single-trip container for Method IA-5 and Method IID packaging. These methods should be substituted for those variations of Method IA and Method II which require the use of expensive materials and which are excessively time-consuming from a labor standpoint. A good example is Method IA-2 which requires the use of a carton, a Grade C wrap, dip-coat sealing and a kraft or glassine overwrap.

The use of the tin can is necessarily limited by physical characteristics such as size, weight and shape of items to be packaged. The tin can should not be used for packaging items which require periodic inspection, check, test or relubrication. The tin can may also be used to provide short term or interim protection for delicate or sensitive items at exceptionally low cost.

Category B

Description: The reusable metal container, interior type, consists of a body, lid, gasket, ring closure and bolt. The gasket lid is secured to the body by means of the ring closure which has two lugs. The bolt is inserted through the lugs and as it is tightened, the lid is further secured to the body, making the container airtight.

Use: This container is highly recommended for preserving and packaging accessories, instruments, and electronics items which require periodic check, test and relubrication. Where physical characteristics permit, they are intended to replace carton-barrier-carton ensembles and other forms of Method II packaging employing flexible vapor barriers.

Category C

Description: The reusable metal container, exterior type, is a heavy gage, fully removable head drum. It is similar in composition to the interior type metal container. In addition, it has a swedged-in base which permits nesting. This feature provides a distinct advantage in warehousing. Closure is effected in the manner described for interior type containers.

Use: The reusable metal container, exterior type, is designed primarily for dehydrated preservation and packaging (Method IID) of large accessory, instrument, electronic, aerological and similar items. Method IID should be substituted for other variations of Method II packaging employing flexible vapor barriers and non-reusable fiberboard or wood containers.

When not required for their primary purpose, i.e., Method IID packaging, reusable exterior containers may be used as shipping containers for bulk or multiple packing of interior packages. This is particularly advantageous where other forms of containers are either not available or are scarce.

In addition to the three categories of containers here described, it is contemplated that special containers with interior shock mounts will be made available for such items as driftmeters, carburetors, and similar assemblies. These containers are still in the experimental stage. Announcement will be made from time to time of acceptance of approved container designs which can be utilized for quantity procurement.

The following additional sources are listed for reference and information purposes:

1. Handbook for Preservation and Packaging of Naval and Aeronautical Material, NavAer 00-85A-502 (scheduled for distribution October 1948).
2. Preservation, Packaging and Packing Technical Supply Bulletin #12, dated 28 October 1948 (Stock Numbers and descriptive data).
3. Preservation, Packaging and Packing Technical Supply Bulletin #14, dated 22 April 1948 (Stock Numbers and descriptive data).
4. Specification AN-C-152, Amendment 3, dated 19 September 1946.
5. Specification AN-C-173, dated 28 April 1948.
6. Specification AN-P-81, Amendment 2, dated 12 November 1946.
7. Specification AN-P-81, Amendment 1, dated 24 January 1946.
8. Specification AN-P-13a, Amendment 2, dated 20 July 1948.

Use Search Radar For GCA

MBAW-1, PACIFIC — This Marine Base Air Warning squadron has been getting excellent results making modified GCA experimental runs with SNJ and PBY-5A aircraft.

The planes remained in good radar contact and under positive control when at only 100 feet altitude and directly over the end of the service runway, using the AN/TPS-1B radar set and the VJ remote scope on four-mile range.

It is felt that, in the event bad weather necessitated an actual instrument approach to the field, this squadron could render invaluable aid.

▲ *BuShips Comment* — **While this gear may be used to bring lost planes in over a field, its accuracy for this purpose is not what it might be and is not in a class with GCA for safe operations.**

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UTRON PROUD OF 'VETS'

CHIEF 'TURK' GRAHAM AND 'LITTLE JOE NOLO'

TWO OLD timers of Utility Squadron Seven, Detachment Able, both have served the Navy above and beyond the call of duty. They are Donald A. "Turkey" Graham, ADC, USN, for his 30 years of service, and "Little Joe Nolo," TD2C-1, USN, for his number of "Nolo" missions.

Although "Little Joe" wears 10 hash marks to "Turkey's" 7, the "Turk" has about 25 years seniority over him. It was about five years ago that "Little Joe" was conceived by the workers of Culver Aircraft Company in Wichita, Kansas. They certainly didn't realize at the time that their drone aircraft was destined to fly through solid walls of antiaircraft fire thrown at it by our task forces during fleet practice maneuvers. "Little Joe" has dive-bombed them, glide-bombed them, and made torpedo runs on them. Ten times he has been launched "Nolo" and ten times he has returned unscathed.

Although the words "drone" and "Nolo" may be comparatively new to many people, actually the Navy has used radio-controlled pilotless aircraft flights for well over two decades. "Drone" is the designation given to an aircraft equipped to fly by radio control, sans pilot. "Nolo" is the term given to any flight of a drone aircraft conducted without a pilot, wholly by radio control.

"Little Joe" or Dog-52, TD2C-1, Bu-No. 76037, as it is officially known, has piled up an amazing total of 10 Nolos for a total of 29.2 hours of pilotless flight. Joe's travels have taken him to Maui, Pearl Harbor, and to his present home, NAS SANTA ANA, California. Approximately 90% of his total flight time, 100.5 hours, and all of his Nolo time has been compiled while attached to VU-7A. Although "Joe's" total flight time is almost double that of the normal life expectancy of a TD2C-1, he is still almost as good as new, is still used daily in training new pilots, and is always ready for another operation.

As proud as this detachment is of Dog-52, it's prouder yet of having "Turkey" Graham's name on its roster. Without a doubt the most well-known and well-liked sailor in this area, if not on the whole West Coast, "Turkey" is the holder of the coveted Navy Cross, presented for his exceptionally meritorious conduct aboard the USS *Arizona* during the Jap attack on Pearl Harbor. He signed up in Philadelphia in June 1918 and has been an "Airdale" most of the time since.

Both "Turk" and "Little Joe" should be aboard for quite awhile. The "Turk" has recently shipped over, and "Little Joe"—well, he'll still be getting shot at, but the detachment pilots have formed a sentimental attachment for him and he'll be a mighty hard target to hit.

VR-5 Flight Rides Out Jinx

VR-5, SEATTLE—Friday the 13th finally caught up with trip 5412 from Seattle to San Diego. At 0100 #1 engine was lost on approaching Miramar and a normal three engine landing was made at NAS SAN DIEGO.

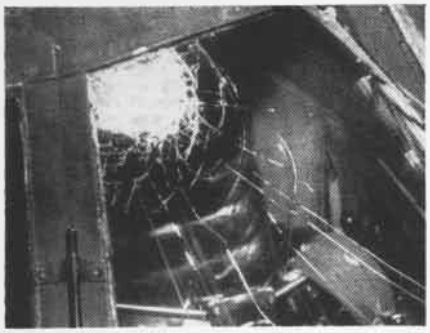
A new engine was immediately delivered by VR-4. Installation, however, revealed the need for a few additional parts, which were brought down on the regular VR-4 flight which arrived at noon on the 13th.

Then the little men began to get in their work. An oil leak caused a 5-7 gallon leak in the 2½-hour run up. When this discrepancy was corrected, #4 engine failed to indicate any oil pressure on turn-up. Bleeding corrected this discrepancy, but on the next turn-up, #3 engine gave forth a very abnormal sound. Investigation revealed two burnt out stacks which were replaced before the test flight finally took off.

On the test flight the hydraulic line to #3 engine pump ruptured and most of the fluid was lost before a landing could be effected. On the return trip to Moffett Saturday afternoon, the fuel pressure gages on #3 and #4 engines and the oil gage on #4 began to fluctuate. At Moffett, bleeding of the systems alleviated this trouble, permitting the flight to proceed to Seattle the following morning.

An F-80, climbing VFR out of Portland scored a near miss, but no hit, so it appeared that the jinx was finally broken. Thanks to the efforts of the engine change crew from VR-4, their duty section at Moffett and the VR-5 plane crew, trip 5412 finally returned to Seattle at noon, Sunday the 15th.

LETTERS



SIRS:

During a bombing and strafing run, a VP-MS-6 PBM piloted by Ens. Bailey and Ens. Carman almost shot itself down. While passing over the target (smoke light and dye marker) an object believed to be a .50 cal. bullet struck and damaged the pilot's windshield (*see photo*). It is believed that the bullet bounded high off the water and was struck as the plane flew into it.

CDR. E. STERNLIEB

NAS TANAPAG, SAIPAN

SIRS:

In the September issue, I found two items of special interest. One is a statement which I wish to correct, the other is strictly added comment.

In the article "Air Reserves Are Active at Floyd Bennett" was mention of a rescue by a PBM, piloted by Lt. David C. Quinn, of a downed F4U pilot. It stated "This spectacular air-sea rescue, right under the enemy's nose, was the first effected in the Inland Sea." Previously it gave the date of this feat as 24 July 1945.

I wish to point out that Lt. Quinn was some two months and 10 days late on being the first to effect a rescue in the Inland Sea of Japan. On May 14, 1945, Lt. (now Lt. Cdr.) Charles S. Tanner and Lt. (jg) Donald O. Comb, attached to the aviation unit of the USS *Astoria* (CL-90), flew their OS2U's into the Inland Sea, rescued the pilot and radioman of a downed SB2C and returned them safely to the ship. I was a third member of the *Astoria* aviation unit at this time, and I'm sure you'll find the records will be of further proof. Incidentally, this was the second rescue in the inland waters of Japan by *Astoria* pilots. On March 29 of the same year, Lt. (jg) Comb and myself picked up an F4U and SB2C pilot in Kagoshima Bay, Kyushu.

As an ex-cruiser pilot, the letter and picture on pg. 32 by Lt. O. E. Wheller of the aviation unit of the *Little Rock*, caught my eye immediately. While serving aboard the *Astoria* I was the victim of an accident almost identical to the one he described. My radioman had just "hooked-on" when our OS2U jumped the sled and was carried into the wake of the ship.

The starboard wing submerged and the plane turned practically on its back. I was just attempting to unfasten my safety belt and bail out when we were miraculously hoisted out of the water. The radioman somehow managed to hang on to the plane and both he and I were brought aboard slightly shaky but definitely dry.

The plane came through unscathed, and after a check, was flown a few hours later. I think this proved the tenacity of the *Kingfisher*, old and slow as it was.

I wish to add that I find every issue of the NAVAL AVIATION NEWS vitally interesting.

J. F. NEWMAN, LT.

ENQUIRER & NEWS, BATTLE CREEK, MICH.

SIRS:

A group has been formed to carry out a USS *Hornet* (CV-12) reunion in Washington, D.C., in February or March of 1949. The exact date will be decided later.

The purpose of this reunion is to give those who served aboard the ship, either in Air Groups 2, 11 or 17, or the ship's company, a chance to get together and renew old friendships. There will be many special guests of honor, including Rear Admiral J. J. (Jocko) Clark of Task Force 58 fame, and our former skipper, Rear Admiral Austin K. Doyle.

Arrangements are being made now for the place and a splendid program is expected. The immediate problem is to get the names and addresses of men who served aboard the *Hornet*, especially those interested in attending the reunion. The latter are requested to send their names and addresses to Robert Neuhauser, 2800 Woodley Road, N.W., Washington 8, D.C.

Robert Neuhauser.

SIRS:

Picking the sailboat winner around Norfolk is simple these days—just look for "Nelms, Lt. (jg) USNR" on the program. At least that is what his Naval Air Reservist friends at the Norfolk Yacht and Country Club say. They ought to know—especially after watching Nelms sail over the finish line for the third consecutive year as winner of the Governor's Trophy for Hampton I design boats.

Student at the University of Michigan, Nelms still has two years to go for his aeronautical engineering degree. Meanwhile he logs flight time as an Associated Volunteer with the weekend warriors at NORFOLK.

LT. CDR. L. B. RIESTER

NARTU NORFOLK

CONTENTS

● RECOGNITION QUIZ

Top—Deck of the U.S.S. *Philippine Sea* look crowded with those R4D's as she transits the Panama Canal en route to the Antarctic. The transport planes flew off the deck with the aid of JATO.

Bottom—Closest to the camera is the XF9F-3, identical to the F9F-2 on the outside, but having the J-42 Pratt & Whitney-built *Nene* engine. The latter plane has the J-33 Allison.

● PHOTO CREDITS

Cabot reactivation photos, center of pgs. 2 and 3, from Philadelphia Inquirer. Photo in back cover ad by Navy Photographic Center, Anacostia; photography by Howard N. Alexander, AF2, and Paul Bosner, PH2, art work by Charles T. Nett and Arthur F. Winterfeldt.

● THE COVER

Our Christmas cover was taken for Naval Aviation News by the NAS Norfolk photo lab. C. U. Ashley, AFC, directed the work with Eugene H. Sengstacken, AFAN, behind the camera. Santa Claus was portrayed by Thomas H. Lewellen, ADAN.

● THE STAFF

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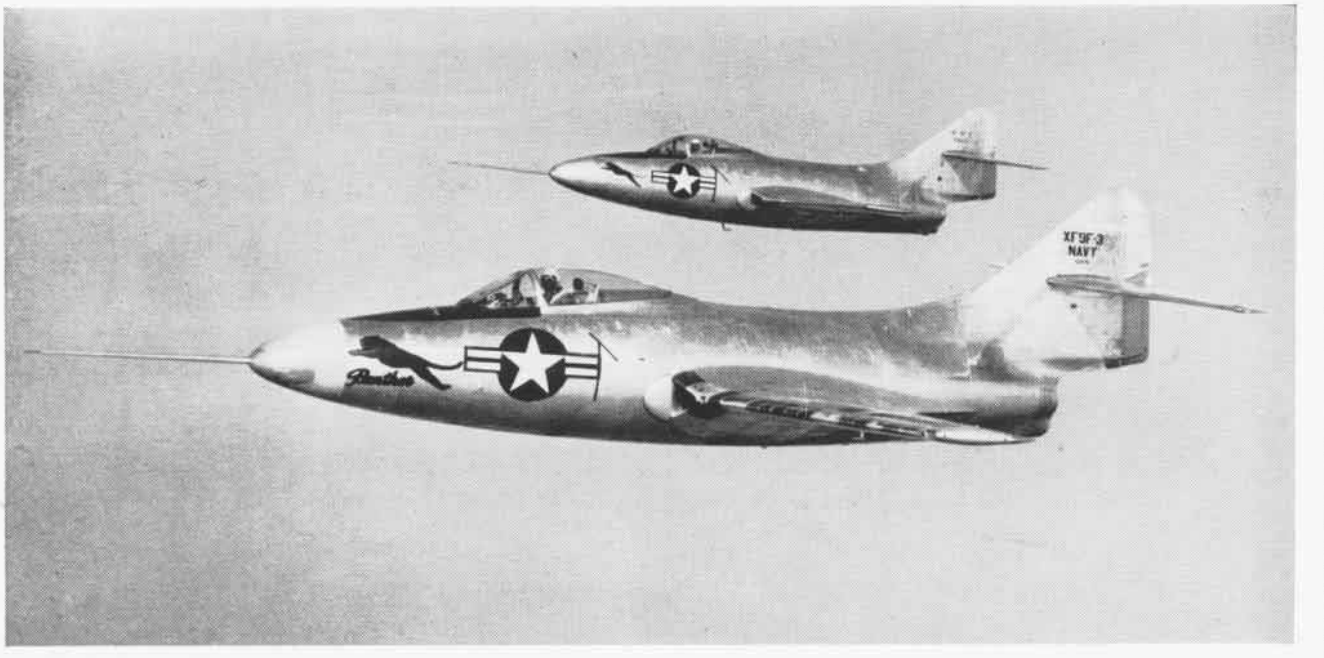
SHIPS AND PLANES

The two jets below are different. Do you know what they are and how they differ? What are those planes on the deck of carrier above? Answers are on facing page.



Welcome Aboard....

NAVAL AVIATION
NEWS

Merry Christmas To All

TO ALL hands at air stations, on carriers or wherever Navy planes fly, Naval Aviation News sends season's greetings. Be sure to send your friends who are interested in naval aviation annual subscriptions to the News. Use the enclosed coupon, attaching names and check, to the Superintendent of Documents, Government Printing Office, Washington, D. C. Do it now, today!